Ag-Related Community Impacts of 2008 Weather Disasters

- Ag related Impacts
- Public Sector
  - Agricultural Infrastructure
  - Community Structures
- Private Sector
  - Agriculture-related
  - Community and businesses
- Localized nature of flood impacts
- Implications

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Ag-Related Community Impacts of 2008 Weather Disasters

- Flooding losses to cropland and livestock facilities are direct effects
- Ag Sector Losses also impact community economy
  - Reduced spending and main street purchases
  - Economic offsets if rebuilding occurs

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Agricultural Infrastructure Impacts

- Flooding damaged transportation infrastructure used by agri-industries
- Facilities and equipment of ag retailers also damaged in flood and wind storms
  - No FEMA grant programs for ag retailers
  - Ag Retailers have no incentives to report losses

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Public Sector --- Community

- Flooding destroys property and disrupts commercial and productive activity
- Flood Plain restrictions apply to buildings and businesses as well as homes
- Disaster mitigation planning needed before next disasters

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Implications/Recommendations

- Address needs of Ag retailers facing flood losses
  - Set aside federal funds to provide 0%/low interest loans to replace lost capital goods
- Devote resources to natural disaster response plan for non-metro communities
  - Develop guidelines for future events
  - Learn from lessons of 93 and 08

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Longer Run

- Create statewide ombudsman office for flood recovery
  - Clearinghouse
  - Investigate delays and bottlenecks
  - Facilitate programming assistance
- Create private-public lending agency to coordinate financial assistance
  - Encourage investments and donations by Iowans to create a loan fund
  - Repository for fundraising dollars
  - Provide low interest loans to assist individuals and businesses rebuild

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Governor's Ag Task Force Meeting
July 30, 2008

Initial Issues

- Prevented Planting
- Second Crop
- Final Planting Dates
- Acreage Reporting

Loss Adjusting Activities

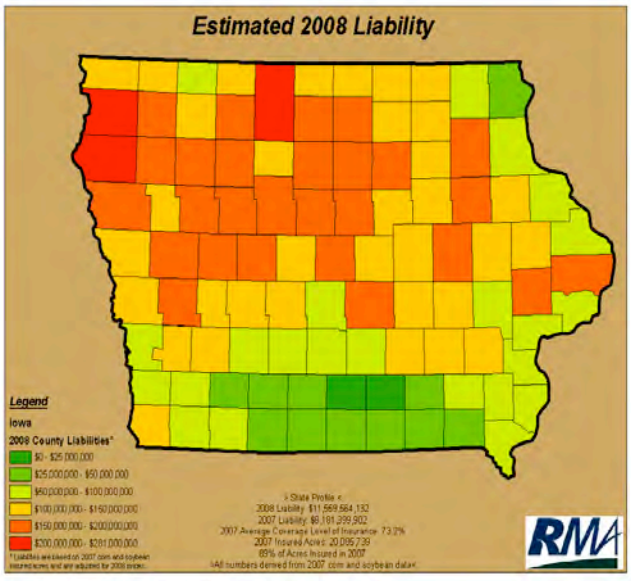
- Notice
- Prevented Planting
- Lost Units
- Wait and see on partial units and price

Producers A Pro-active

90% Acres Insured

73% Buy-up

Great APHs



Reasons for Optimism

- Strong Delivery System
- $11 billion Plus Insurance Coverage
- Natural Hedge
- $640 -corn
- $471 -soybeans

Craig Rice
Director- Risk Management Agency
crice@rma.usda.gov
651-290-3304

Farm Bill Overview

Direct & Counter-Cyclical Program

Supplemental Agriculture Disaster Assistance Program

DCP Program

- Base Acres Established according to the 2002 Act will remain in effect for the years 2008 through 2012. (Corn/Soybeans)
- Payment Yields Established according to the 2002 Act will remain in effect for the years 2008 through 2012. (Corn/Soybeans)

DCP Program

- Payment Acres: The percentage of base acres used in calculating DCP payments are as follows:

2008: 85% (Direct & Counter-Cyclical)

2009 – 20011: 83.3% (Direct)
85% (Counter-Cyclical)

2012: 85% (Direct & Counter-Cyclical)

DCP Program

- Direct Payment Rates for 2008 through 2012: (Not Market Driven)
  - Corn - $0.28/bu
  - Soybeans - $0.44/bu
  - Wheat - $0.52/bu
- Advance Payments can be requested and will be 22% of the total Direct Payment.

DCP Program

- Counter-Cyclical Payments will be issued if the "Effective Price" is less than the Target Price of the crop.
- Example: Corn - $2.63 Target price
  $2.63 - $0.28 = $2.35
  12 Month Average Price must be below

DCP Program

- Direct Payment Limitation Amt.
  $40,000 / Person
- Counter-Cyclical Payment Limitation Amt.
  $65,000 / Person

DCP Program

- Prohibition on Payments: "NEW"

The Act prohibits DCP payments to a producer on a FARM when the SUM of the Base Acres are 10 acres or Less.

2 Exceptions:

- Socially Disadvantaged Farmer
- Limited Resource Farmer

DCP Program

Socially Disadvantaged Farmer

- A **socially disadvantaged** farmer or rancher is a farmer or rancher who is a member of a socially disadvantaged group. For entity applicants, ALL members of the entity **must** be socially disadvantaged.

- A socially disadvantaged group is a group whose members have been subject to racial or ethnic prejudice because of their identity as members of a group without regard to their individual qualities

DCP Program

Limited Resource Farmer

- Limited resource farmer/rancher who meets **both** of the following:
  - Directly or indirectly has gross farm sales not more than $100,000 in both of the previous 2 years
  - Has a total household income at or below the national poverty level for a family of 4 or less than 50 percent of county medium household income in both of the previous 2 years

DCP Program

- To qualify for one of the two exceptions:

- The farm must be "Entirely Owned" by a Socially Disadvantaged or Limited Resource Producer. (Not the Operator)
- All "Owners" must "Self Certify" one of the two exceptions in item 13B and initial and date 13C/D on the CCC-509.

2008 DCP Program

2008 DCP Signup Deadline

September 30, 2008

NO authority for Extension

DCP Program Payments

Direct Payment Calculation
Average Farm 50/50 on Base Acres

Corn Base:
.5 acre X 85% X 100bu X .28¢ = $11.90
Soybean Base:
.5 acre X 85% X 30bu X .44¢ = $5.61

Total Per Acre Payment = $17.50 Average

2009 – 2012 ACRE Election

- Average Crop Revenue Election (ACRE)
- The Act authorizes ACRE Program payments to producers who make an "IRREVOCABLE" election to participate. (2009 – 2012)

- NOT receive Counter-Cyclical Payments on the farm.
- 20% Reduction in the Direct Payments on the farm.
- 30% Reduction in the Marketing Assistance Loan Rates

2009 – 2012 ACRE Election

- Two Triggers must be met for payments to be issued under this election:

- State Trigger: State ACRE Guarantee must exceed Actual State Revenue.

- Farm Trigger: Farm ACRE Benchmark Revenue must exceed Actual Farm Revenue.

2009 – 2012 ACRE Election

- ACRE Election request is available starting in 2009.
- Once the ACRE Election has been requested, the farm is "Locked-in" through 2012.

Supplemental Agriculture Disaster Assistance Program

- Supplemental Revenue Assistance Payments Program (SURE)
- Livestock Forage Disaster Program (LFP)
- Tree Assistance Program (TAP)
- Emergency Assistance for Livestock, Honey Bees, and Farm-Raised Fish (ELAP)
- Livestock Indemnity Program (LIP)

SURE

- SURE is **"Revenue"** Based and not individual crop specific as in other disaster programs such as CDP.
- SURE Payments will be equal to 60% of the "difference" between the program "guarantee" for the farming operation and "total" of the farming operation's "revenue".
- Regulations are being developed .

SURE

- Supplemental Revenue Assistance Program (SURE) – covers crop losses on the "Entire" farming operation due to natural disasters when:
  - The county receives a Secretarial disaster declaration, including contiguous counties

  OR
  - The total loss of production for the farm is greater than 50% or more.

SURE

Eligibility Requirements

Obtain insurance for each insurable & non-insurable commodity on the farm

All Pastures in which the producer has an interest that is included in the cropland or not must be covered by NAP in order to qualify for SURE "Revenue" Payment if a 'benefit" has been taken from the pasture.

SURE

2008 only, producers who suffered losses on an insurable or non-insurable commodity but did NOT meet the crop insurance or NAP coverage criteria requirement can "buy-in" to be eligible for SURE.

Buy-In Fees
2008 SURE Program

- Crop Insurance (CAT) Insurable Crop
  - $100 per Crop
  - $300 per producer/per administrative county
  - $900 total per producer for all counties
    - Less any previously paid fees for CAT/Buy-Up
- NAP Insurance (NAP) Non-Insurable Crop
  - $100 per Crop
  - $300 per producer/per administrative county
  - $900 total per producer for all counties
    - Less any previously paid fees for NAP/Buy- Up

SURE "Buy-In"

- 2008 "Buy-In" Deadline for SURE
  - COB **September 16, 2008**
  - Administrative County Office
    - CCC-752 ~ Insurable Crops (CAT)
    - CCC-753 ~ Non-Insurable Crops (NAP)
    - County Offices will be collecting both fees.

2009 SURE Program

Producer MUST insure ALL crops including pasture in the “Farming Operation” by the applicable sales closing date. No “buy-in” provisions for 2009 through 2012.

Insurable crops: At least CAT coverage purchased from a Crop Insurance agent.

Non-Insurable crops: NAP coverage from local FSA County Office.

QUESTIONS ????

Crop Reporting Deadline Extended

- On May 20, 2008 the normal June 30 crop reporting deadline for FSA was extended nationwide to August 15
- On June 12, 2008 the reporting deadline for prevented planting and failed acreage was extended to August 15
  - Farm visits waived if claims can be verified by FSA County Committee (COC) knowledge

Prevented Planting

- June 17, 2008 FSA waived the requirement for producers to establish intent of planting (disking, orders for seed and fertilizer, financing documents) in selected states

Risk Management Agency (RMA) Crop Reporting Deadline

- June 25, 2008 RMA extends crop reporting deadline to August 15 in selected states

Failed Acreage

- July 3, 2008 FSA waived the requirement in selected states to approve failed acreage after disposition of the crop
  - If COC has knowledge or crop insurance data supports the claim

EMERGENCY USE OF CRP

- June 13, 2008 Iowa FSA requested 23 counties be released due to severe flooding of pasture acres along rivers
  - Move livestock to drier ground until water recedes and fences are repaired

Emergency Use of CRP-continued

- June 13, 2008 National FSA authorized 23 counties and bordering counties
  - Temporarily moved for not more than 30 days
  - Approved by FSA County Office on case-by-case basis
  - No payment reduction
  - Authorization expires June 27

Emergency Use of CRP-Continued

- Iowa FSA requested 5 additional counties be released under these same provisions—National FSA approved
  - Authorization expires for 3 counties July 7
  - Authorization expires for 2 counties July 18

Emergency Use of CRP-continued

- Iowa FSA requested emergency haying and grazing of CRP in counties with a Presidential disaster declaration and contiguous counties
  - Payment of $75 administrative fee

Emergency Use of CRP-continued

- National FSA authorized emergency grazing only in 16 states due to flooding
  - All counties with a Presidential and contiguous counties are eligible
  - 97 of 99 counties in Iowa
    - (exception: Plymouth and Cherokee counties)

Emergency Use of CRP-continued

- Authorization begins July 8, 2008 and ends September 30, 2008
- Follow provisions of standard emergency grazing, except eligible during primary nesting season
- Obtain modified conservation plan
- 25% CRP annual rental payment reduction

Emergency Use of CRP-continued

- June 19, 2008 Iowa FSA requested release of CRP for application of manure and waste products due to wet spring and widespread flooding to avoid contamination of water sources

Emergency Use of CRP-continued

- June 20, 2008 National FSA authorized application of waste products on CRP provided:
  - Owner and/or operator of the waste facility and the regulator indemnifies FSA and CCC against all liability that may apply
  - Applies to counties with Presidential Disaster Declaration counties
  - Authority expires July 31, 2008

Emergency Use of CRP-Continued

- Requested from FSA County Office on case-by-case basis
- NRCS developed a conservation plan support document
- Owner/operator sign a statement holding USDA/CCC harmless

Emergency Use of CRP-continued

- Provide Emergency Use of CRP Manure Application Procedures from IDNR
- Provide separation distances for land application of manure from open feedlots and confinement feeding operations from IDNR
- CRP participant to contact DNR Environmental Services Division office covering the applicable county

ECP

July 2008 1

ECP

Program Purpose

- Rehabilitate farmlands and conservation facilities damaged by:
  - wind and water erosion
  - floods
  - other natural disasters

July 2008 2

ECP

Objectives

ECP is to provide cost share assistance to agricultural producers who have suffered severe damage to their farmland as a result of a natural disaster.

- the damage must be of such magnitude that it would be too costly for the producer to rehabilitate without Federal assistance.

Note: ECP is not:

- an "entitlement" program
- intended that everyone who suffers a loss is entitled to a payment

July 2008 3

ECP

Maximum Payment Limitation

$200,000 per person, per disaster

Minimum Cost Share Limitation

$750 per person, per fiscal year for all natural damage on all farms

July 2008 4

ECP

Cost share levels

The State Committee has set the cost share level at 75%

July 2008 5

ECP

Limitation based on Land Value

Cost share assistance to rehabilitate damaged farmland shall not be more than 50% of the agricultural market value of the affected land as determined by the county committee.

July 2008 6

ECP

County Office shall maintain a permanent file on natural disasters that have severely damaged agricultural lands in the county, regardless of whether disasters were approved for ECP.

- This information may be used as a basis for future program requests and designations.

July 2008 7

ECP

The file may include news articles but shall include as a minimum:

- dates
- type of natural disaster
- a record of the areas affected
- total program funds earned, if applicable
- map with areas identified
- STORM report

July 2008 8

ECP

Eligible Practices

- EC1 Removing Debris from Farmland
- EC2 Grading, Shaping, Releveling, or Similar Measures
- EC3 Restoring Permanent Fences
- EC4 Restoring Conservation Structures and Other Installations

July 2008 9

ECP

For 2008 ONLY:

The National Office has waived the Three in Twenty-five Frequency

1-ECP (Rev. 3) Paragraph 35

July 2008 10

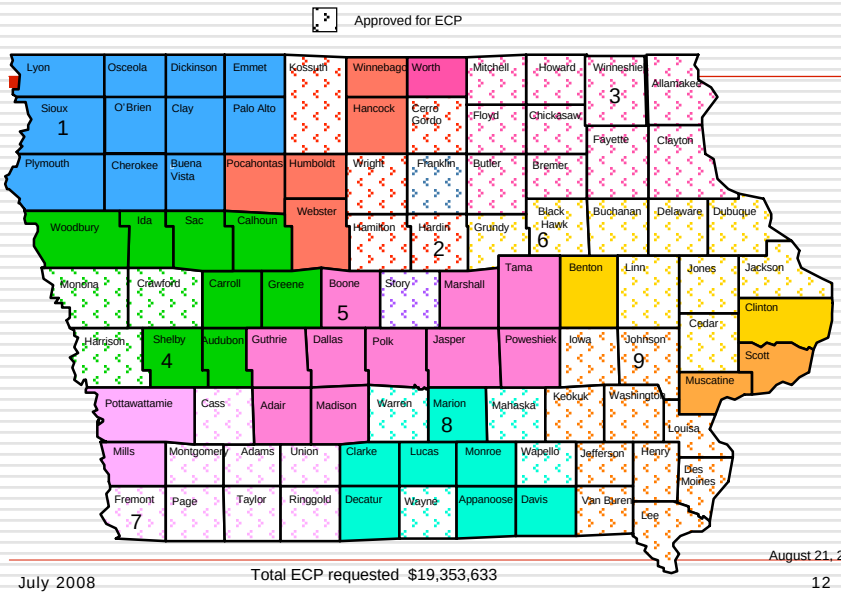
ECP

1-ECP (Rev. 3) Subparagraph 6F

- Producers are not eligible to receive compensation under ECP and any other Federal or State cost share program for the same component on the same land.
- Producers receiving CRP funding are not eligible to receive an ECP payment on the same land.

July 2008 11

2008 ECP Approved Counties



Total ECP requested $19,353,633

August 21, 2008

July 2008 12

Farm Service Agency

Loan Programs

- Direct Loans
- Guaranteed Loans

Farm Service Agency

Direct Loan Programs

- Borrower directly from the Federal Treasury
- Generally lower rates and longer repayment terms
- Lower loan limits

Farm Service Agency

Guaranteed Loan Program

- Loan comes from a traditional lender
  - FSA serves as guarantor only
- Higher loan limits

Farm Service Agency

Loan Types

- Operating Loans
- Farm Ownership Loans
- **Emergency Loans**

Farm Service Agency

Emergency Loans

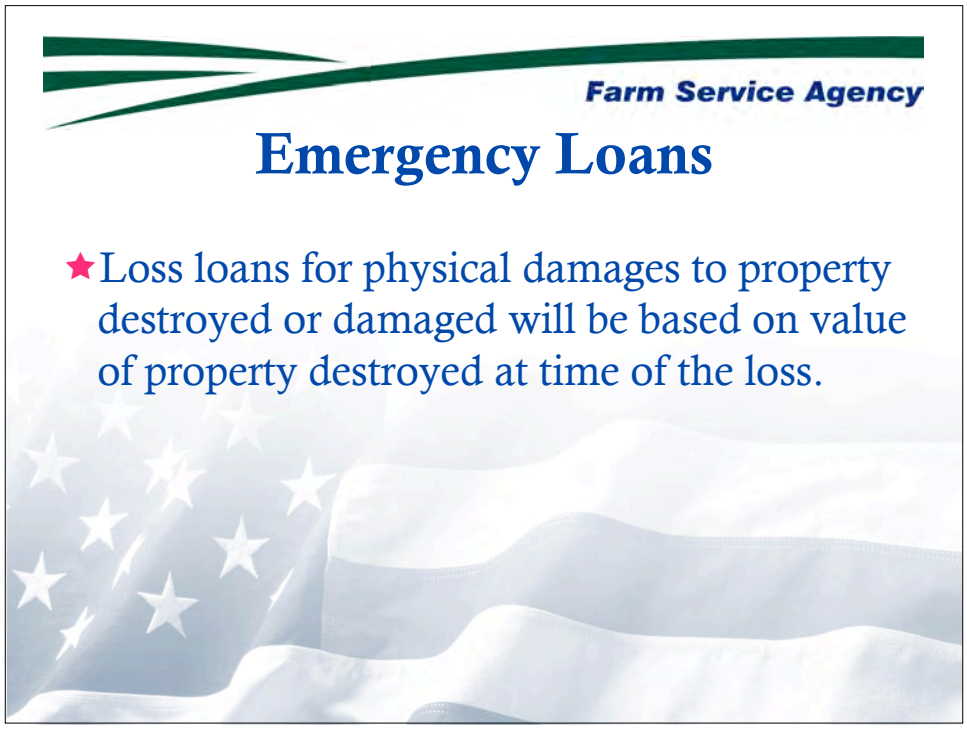
- Direct Loan Program
- Disaster designation
- 97 counties in Iowa designated

Farm Service Agency

Emergency Loans

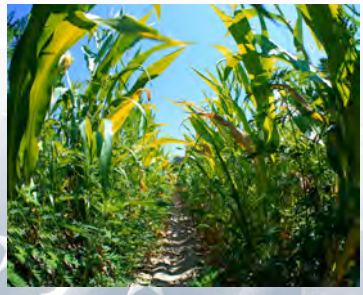
- Production Losses
- Physical Losses


Farm Service Agency
Emergency Loans
★Production loss loans will be based on disaster year production compared to the five year production history.
★30% loss threshold
★100% loan less insurance compensation.


Farm Service Agency
Emergency Loans
★Loss loans for physical damages to property destroyed or damaged will be based on value of property destroyed at time of the loss.

Farm Service Agency

Emergency Loans



- Interest rate – 3.75% (July rate)
- Repayment terms – 1-40 years
- Loan limit - $500,000

Farm Service Agency

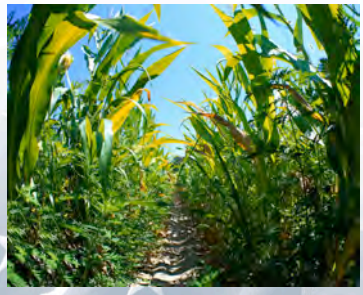
Emergency Loans

Uses:

- Restore or replace essential property
- -Pay essential farm operating or family living expenses
- -Refinance debt
- Reorganize the farming operation

Farm Service Agency

Operating Loans



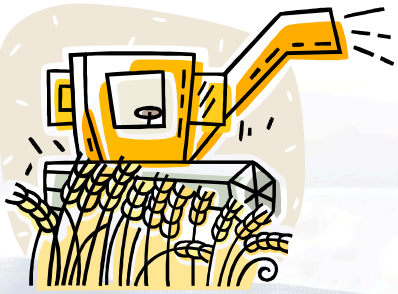
- Interest rate – 3.625% (July rate)
- Repayment terms – 1-7 years
- Loan limit - $300,000

Farm Service Agency

Operating Loans

Uses:

- Crop inputs
- Operating needs
- Machinery purchases
- Livestock
- Environmental programs
- Debt refinance



Farm Service Agency

Farm Ownership Loan Programs

- Participation Loan
- Beg. Farmer Downpayment Program
- Regular Farm Ownership Loan

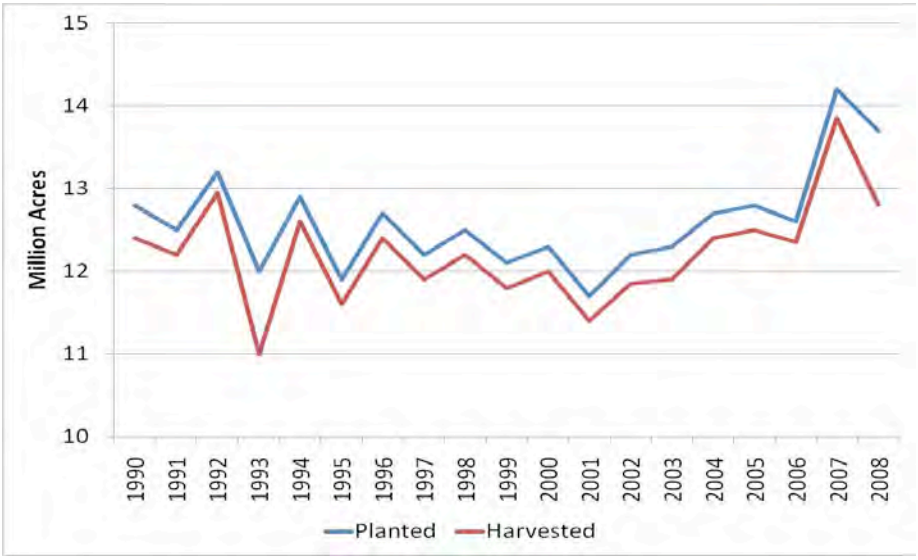
Farm Service Agency

Guaranteed Loan Programs

- Bank financing
- FSA backing – up to 90%
- Operating loans
- Farm ownership loans
- Loan limit - $949,000


Farm Service Agency
Information/resources
Farm Service Agency
http://www.fsa.usda.gov/pas/

Iowa Corn Area



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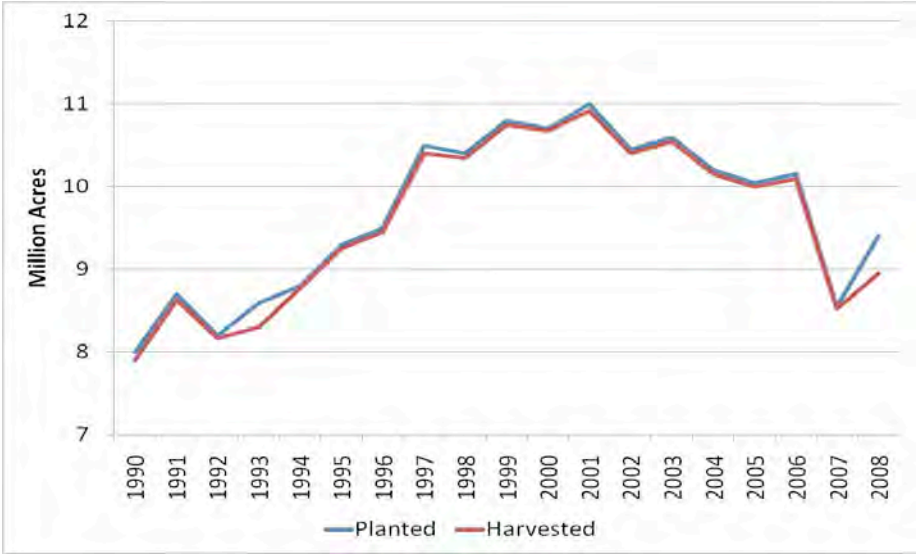
Iowa Soybean Area



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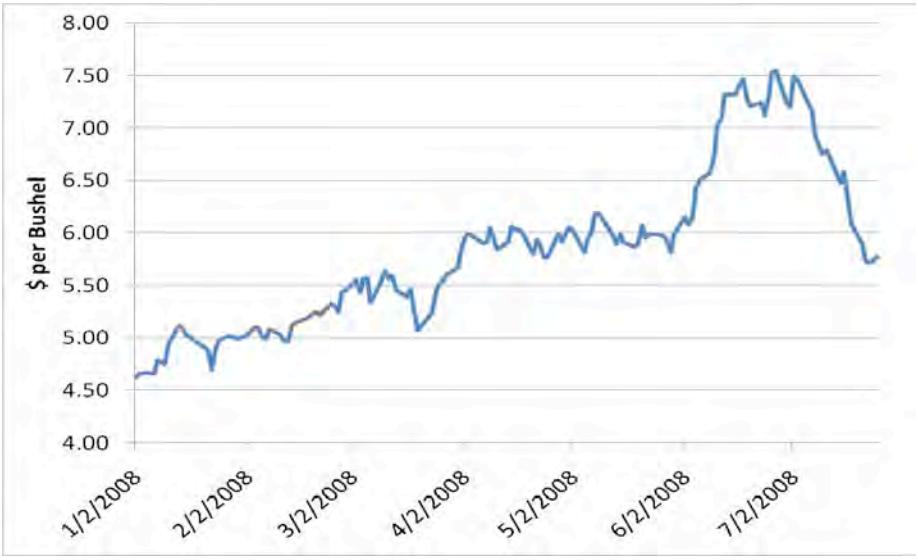
Corn Prices



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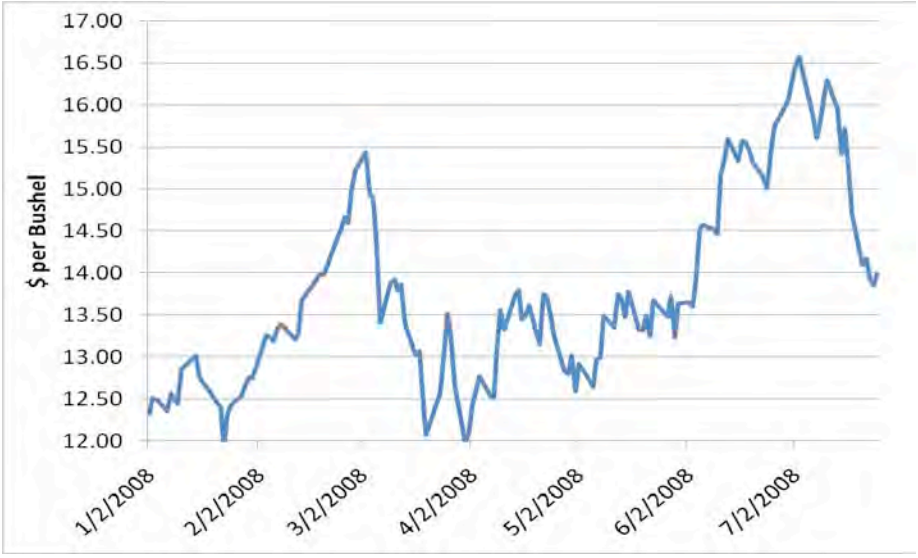
Soybean Prices



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Livestock Notes

- Flooding forced early cattle feeding
- The 1st cutting of hay was delayed
  - Quality losses
  - Possible yield hit on 2nd cutting
- Will impact winter feed supplies
- Many pastures suffered damage
  - Silt and debris on fields
  - Fences damaged or destroyed
- Access to CRP will provide some assistance

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Federal Government Programs

- Crop Insurance
  - Prevented planting and replant coverage
- Supplemental Revenue Assistance Program (SURE)
  - 2008 is the 1st year of the program
- Conservation Reserve Program
  - Emergency grazing for livestock
- Emergency Farm Loans
  - Requires a 30% production loss
- Emergency Conservation Program

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Short-term Recommendations

- Disaster Debt Set-Aside Program?
  - Can relieve debt stress due to disasters for FSA borrowers
- SURE sign-up
  - Producers need information on the program, the special sign-up, and the deadlines for 2008

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Longer-term Recommendations

- SURE timing
  - While the program is effective for 2008, the 1st payments will not be made until Oct. 2009, nearly a year and a half after the disaster
  - It may be worthwhile to see if Congress and USDA would modify the SURE program to allow partial or advance payments in the year of the disaster

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What did we *observe* and what did we *learn* from the floods of 2008?

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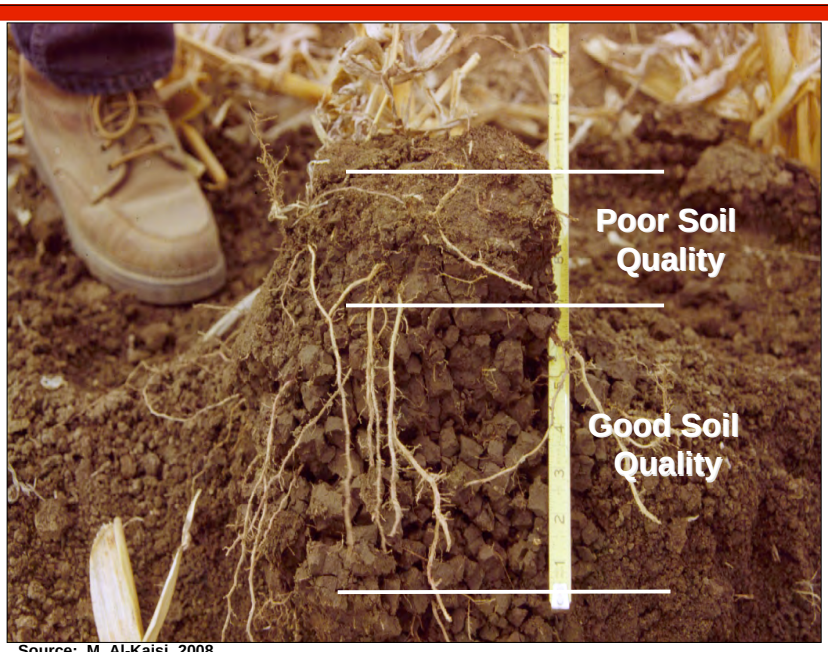

Source: M. Al-Kaisi, 2008

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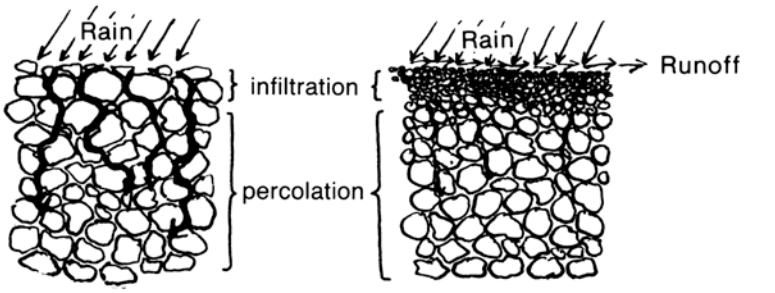

Source: Harpstead, Sauer, and Bennett, 2001

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Poor Soil Quality

- Reduced soil organic matter
- Reduced pore space, reducing infiltration of water
- Increased soil bulk density

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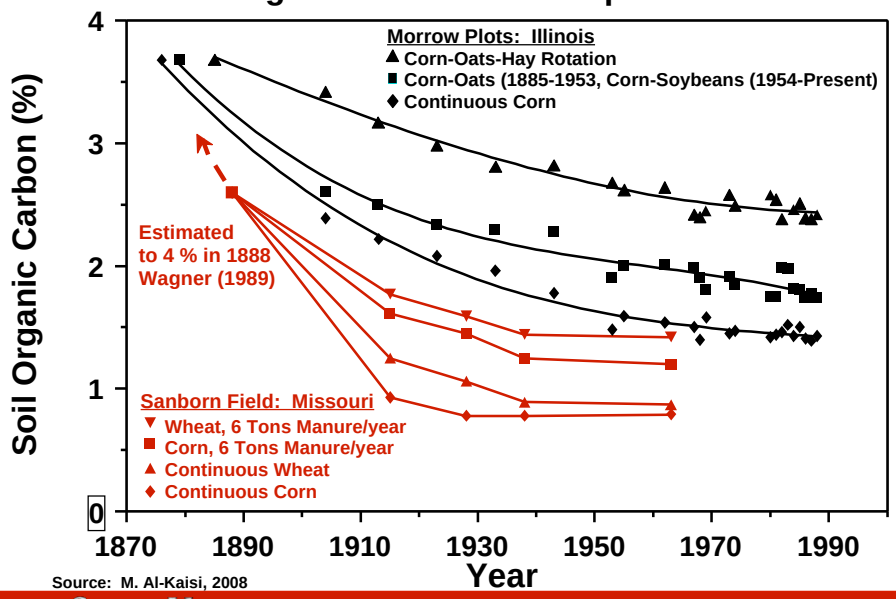
Long Term Effects of Crop Rotations



Source: M. Al-Kaisi, 2008

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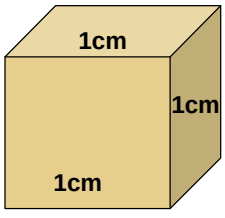
Soil Bulk Density

Measured by the weight of soil in a specific volume



Bulk Density = Weight of soil / Volume of soil

Water: Weigh grams/cubic centimeter: ~1.0

High Organic Soil: <1.0

Tilled Surface Soil (0-7"): 1.25 – 1.40

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Source: Cummins, 2008

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Source: M. Al-Kaisi, 2008

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Potential Options for Rebuild Iowa Commission

Authorities:

- County soil loss limits
- Conservation compliance
- Residue management definitions
  - >30% residue = conservation tillage
  - Residue management in concert with tillage systems

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Short-term:

- Incentives for conservation practice
  - Grass waterways
  - Filter strips
  - Riparian buffers
- Target funds for land having the highest return for reduction of potential erosion
- Residue inventory incomplete. Only 70 of 99 counties included in latest survey
- Complete and implement LIDAR
  - Site-specific design – increases accuracy, reduces time and cost
  - Allows for image analysis versus collection of field data via survey crew
- ~1.0 million acres in fallow this year
  - Soil test
  - Cover crops for nutrient recycling

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Long-term:

- **Support performance-based watershed initiatives**
- **Technical assistance through educational activities focused on HUC 12 or smaller watersheds, i.e., 15,000 to 25,000 acres**
- **Assess cost effective practices**
- **Role of bioenergy crops**
- **Diversity of cropping systems**
- **Research to develop innovative conservation practices**

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The Goal

Increase soil organic matter and reduce soil bulk density

….by leaving maximum amount of residue on the soil surface from fall harvest until after planting the following spring

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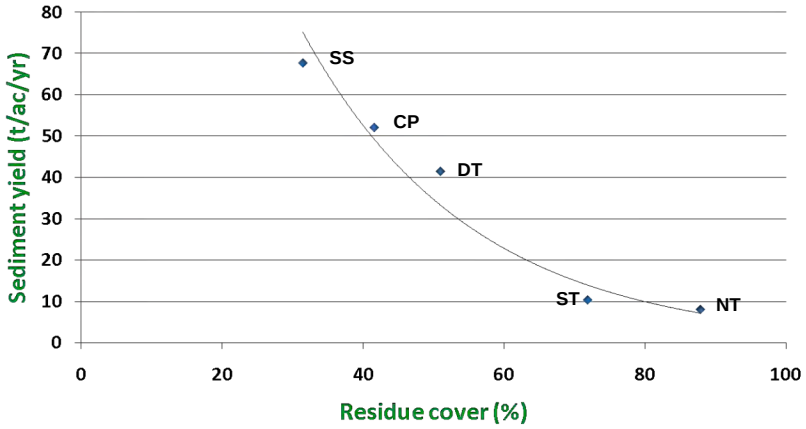
Site 1: Winneshiek County, 9% slope



Residue cover at planting (%)	NT	ST	DT	CP	SS
Corn	89	87	43	26	23
Soybean	87	57	59	56	39

Source: Helmers, 2008

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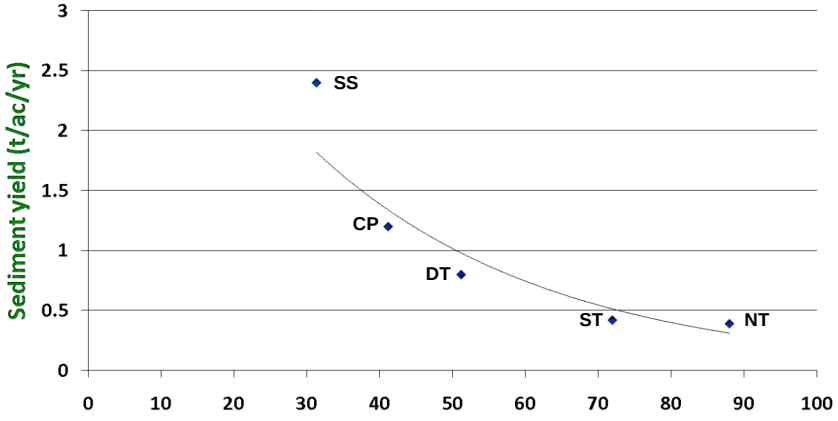
Site 2: Delaware County, 1.7% slope



Residue cover at planting (%)	NT	ST	DT	CP	SS
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Soybean	87	56	59	56	39

Source: Helmers, 2008

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2008 Estimated Crop Losses and Associated Values – Preliminary Report
Supplement A - Agriculture and Natural Resources Task Force Report
August 16, 2008

While there are numerous estimates of Iowa and US crop losses due to the 2008 flooding events in the Midwest, a final determination of losses and related impacts will not be known until well after harvest. The National Agricultural Statistics Service (NASS) of the USDA routinely finalizes its production values for most grains and oilseeds in its January report immediately after the conclusion of the previous harvest.

Earlier private estimates have placed Iowa losses as high as four billion dollars to a low of 1.3 billion. It is likely that real losses will fall somewhere between these estimates. For purposes of this report three categories were used to determine expected losses with a final estimate representing the aggregate of each.

Losses are grouped into three major categories. These are:

- *Direct Losses*: Cropland determined to be prevented planted or otherwise devoid of any harvestable crop.
- *Indirect Losses*: Crops or cropland expected to have reduced yields due to delayed planting, replanting or adverse weather conditions that have limited otherwise normal production.
- *Anticipated Additional Losses*: Crops planted that we do not expect to make maturity before first frost and may essentially have little or no value other than that of use for forage or as a cover crop.

While estimating cropland devoid of any growing crop is becoming more certain, the date of first frost is now clearly the single largest variable in the determination of any estimated losses. An earlier frost would obviously shift more late planted crops into the latter of the above categories while a later frost would push more crop production into the second category outlined above. Yield losses may likely parallel the direct losses of prevented plantings and subsequent crops destroyed.

Current NASS estimates (*8/12/08 Crop Production Report*) of planted and expected harvest acres are used as the basis for acreage values. Recent Iowa cash grain prices are used to project the estimated economic losses.

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Direct Acreage Loss and Associated Values

CORN: A planted versus harvested difference of 800,000 acres is currently being projected representing the difference between 13.7 million (planted) and 12.9 million (expected harvest) acres. Estimated loss value of $720,000,000.[1]

SOYBEANS: A planted versus harvested difference of 450,000 acres is currently projected representing the difference between 9.4 million acres (planted) and 8.95 million (expected harvest) acres. Estimated loss value of $283,500,000.[2]

Total direct acres and estimated losses then are 1,250,000 million acres and **$1,003,500,000.**

Indirect Losses (Yield Factor)

Corn: An implied 20 percent of Iowa's corn harvest estimate of 12.9 million[3] acres is used to show some expected yield reduction despite being treated properly as "planted" in the most recent NASS Crop Production Report. The result is 2.58 million acres subjected to varying degrees of yield reduction. An estimate of 30 bushels per acre lost is used as the average loss on this 20% (2.58 million acres).

Using the same per bushel values as shown for the above direct acreage losses results in an estimated indirect loss of $157.50 per acre or $406,350,000.

Soybeans: An implied 25 percent of Iowa's soybean harvest estimate of 8.950 million acres is used to show some expected yield reduction despite being treated properly as "planted" in most recent NASS Crop Production Report. The result is 2.2375 million acres subjected to varying degrees of yield reduction. An estimate of 12.5 bushels per acre lost is used as the average loss on this 25% (2.2375 million acres). The estimated indirect loss of $153.00 per acre then converts to a total dollar loss of $342,340,000.

Total Indirect Loss due primarily to yield is estimated at **$748,690,000**.

[1] Using 2007 yield of 171 bu. / acre and above referenced $5.25 per bushel yields $897.75 value per acre rounded to $900.00
[2] Using a 2007 yield of 51.5 bu / acre and above referenced $12.25 per bushel yields $630.87 value per acre rounded to $630.00
[3] To avoid double counting of acres the NASS estimate of 12.9 million acres is used rather than 13.7 m/ac

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Additional Expected Loss (Frost Loss)

Due to obvious conditions of extremely late planted crops and therefore maturity dates that may not occur until well after the date of an expected first frost, it is necessary to incorporate some form of estimate for growing crops that will simply not be included in any final production (harvested) values. It appears very likely that USDA-NASS will need to further widen the differences between planted and harvested acres of both crops in its final reports. This would be expected to come from a further lowering of the harvested acreage in subsequent reports.

For estimating purposes here, a 2% additional loss is used for corn acres and an additional 3% is used for soybeans. Again, the actual date of first frost may move these estimates upward or downward in a potentially significant manner.

Using the same 12.9 millions corn acres and the same $900 value / acre, the 2% frost loss yields an estimated 258,000 acres and $232,200,000 economic loss.

The 3% estimated frost loss to soybeans at $630 per acre results in an acreage loss of 268,500 and $169,160,000 economic loss.

The total Additional Expected Loss then is 526,500 acres and **$401,360,000**.

Other Crop Losses

Losses due to acreage and yield for such crops as alfalfa, pasture, oats, fruits and vegetables and other crops will be much smaller primarily due their overall acres and their ability to hold on to soft or moving soils.

From a limited review of existing production levels and values, an estimate of **$6,500,000** is offered until more definitive information becomes available.

Replant Costs

An estimated 5% of Iowa's total row crop production is estimated to have been replanted. This would include all 23 million acres that is expected to be harvested for corn or soybeans. A total of 1.15 million acres fall into this category at an estimated average replant cost of $80 per acre. The result then is an additional **$92,000,000** in economic loss.

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Basis Loss

Any disruption of transportation corridors or shutdown of processing plants is well known to cause basis levels for commodity crops to widen. It is very difficult to put exacting estimate on these costs but producers of agricultural commodities know first hand that wider basis levels and corresponding costs are largely borne by those producers.

For a minimum of 2 months significant disruptions occurred and it would have been expected that at least 300 million bushels of corn and 100 million bushels of soybeans would have been marketed. Basis levels rose dramatically from pre-event levels by some $.15 (15 cents) per bushel.

Much of this 400 million bushels sold or delivered would have incurred these elevated basis levels. Therefore, an estimated cost of **$60,000,000** is estimated.

Summary

At the time of this writing it is estimated that losses to Iowa's 2008 crops from weather related losses is estimated to be $2,252,050,000 (2.252 billion) with an addition loss of $60,000,000 stemming from market disruptions to the transportation and processing infrastructures.

More precise estimates will become available as the 2008 crops progress through harvest completion. Additional agricultural losses are estimated in the primary report of the Agriculture and Natural Resources Task Force.

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

Bill Northey, Secretary of Agriculture

Conservation Practices and the Iowa Storm Events of 2008

2008 Flood Damage Assessment Survey—Results

Estimated acres suffering severe damage

20 tons per acre soil erosion:	2,284,000 ac.
Bottomland scouring:	636,000 ac.

Percent of practices that operated properly

Grass Waterways	55%
Terraces	83%
Grade Stabilization Structures/ Water and Sediment Control Basins	90%

Number of conservation practice sites needing repair

Grassed Waterways	12,157
Terraces	8,137
Water and Sediment Control Basins	3,375
Grade Stabilization Structures	800

Key Observations of Field-Level Conservationists

- Crop residues reduced soil erosion and slowed runoff
- Long term no till showed fewer signs of erosion and runoff than any system using tillage
- Fields with combinations of two or more conservation practices performed better than fields with a single practice
- Practices installed and maintained to NRCS standards and specifications generally functioned and operated as designed and withstood the storms
- Maintenance of conservation practices, particularly waterways, was important to their success.

Lessons Learned – Direction for the Future

1. Consider "hydrologic footprint" of all actions
2. Propose new initiatives for water storage & infiltration
3. Accelerate adoption of no-till/residue management for erosion, soil quality, & infiltration
4. Expand "conservation systems approach"
5. Increase focus on practice maintenance
6. Renewed focus on planning at the farm/watershed level

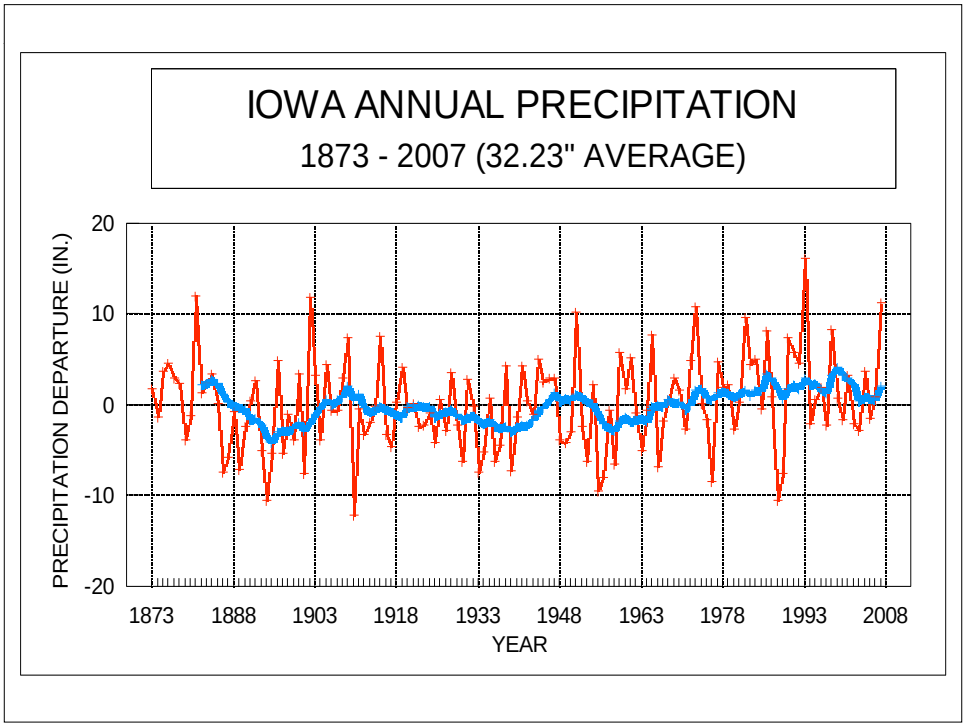
Build a *"Culture of Conservation"*!

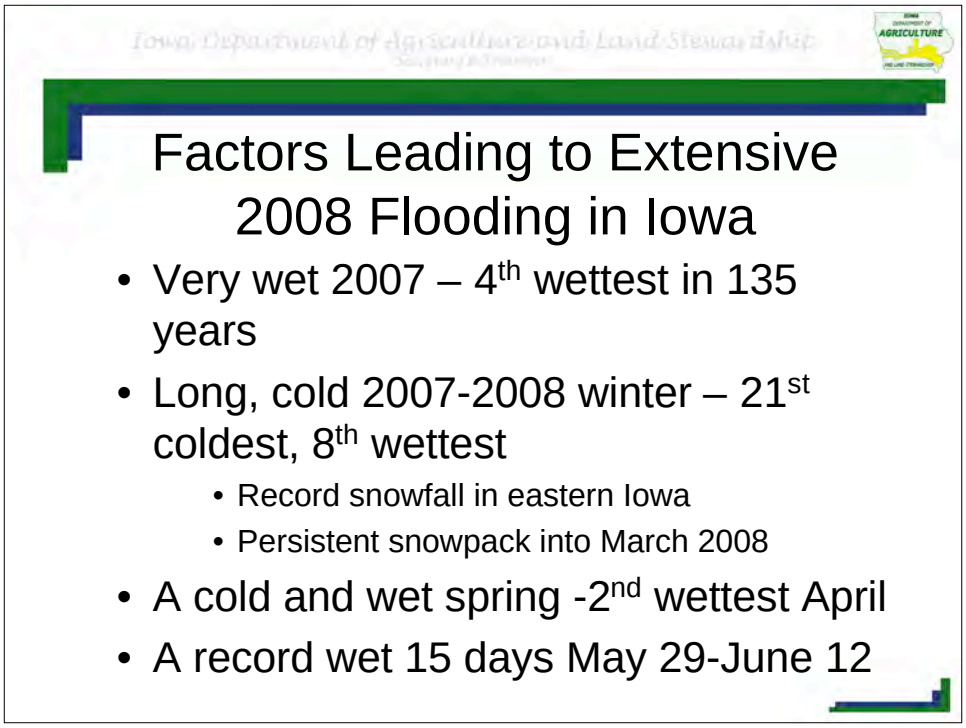
Conservation Practices and the Iowa Storm Events of 2008

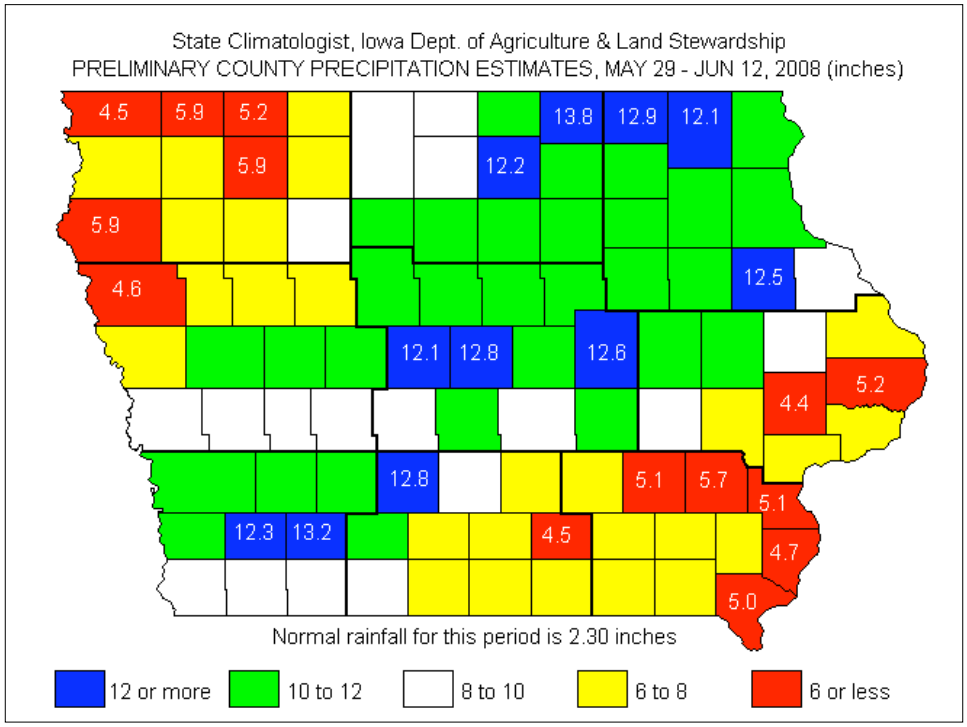
Chuck Gipp, Director

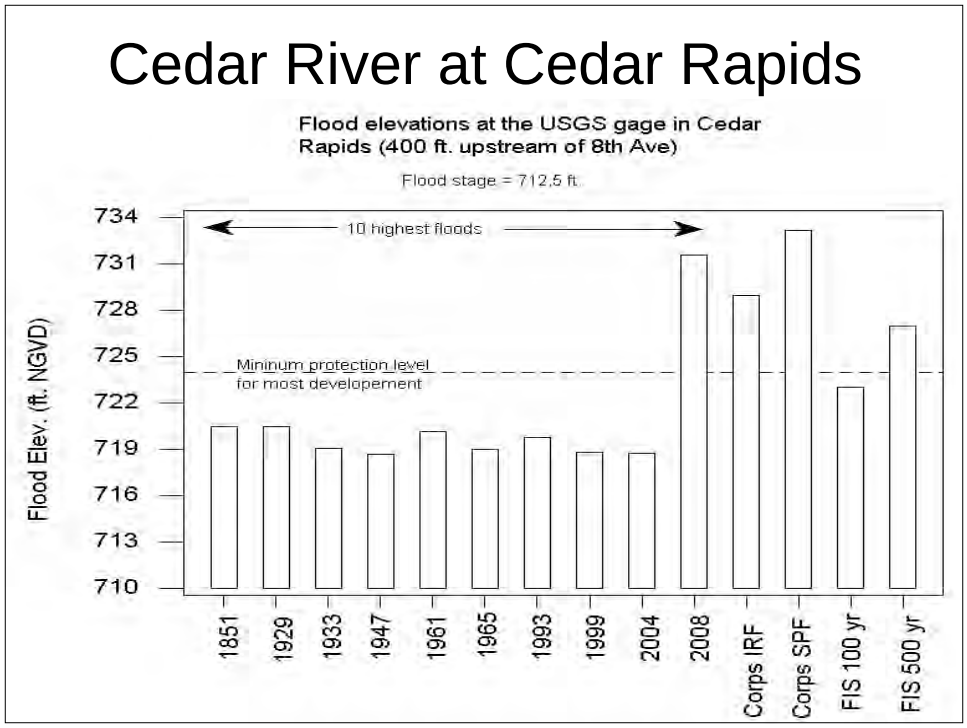
Division of Soil Conservation

D. Lemke, J. Neppel, H. Hillaker, B. Gelder, J. Riessen


IOWA ANNUAL PRECIPITATION
1873 - 2007 (32.23" AVERAGE)
PRECIPITATION DEPARTURE (IN.)
20
10
0
-10
-20
1873
1888
1903
1918
1933
1948
1963
1978
1993
2008
YEAR

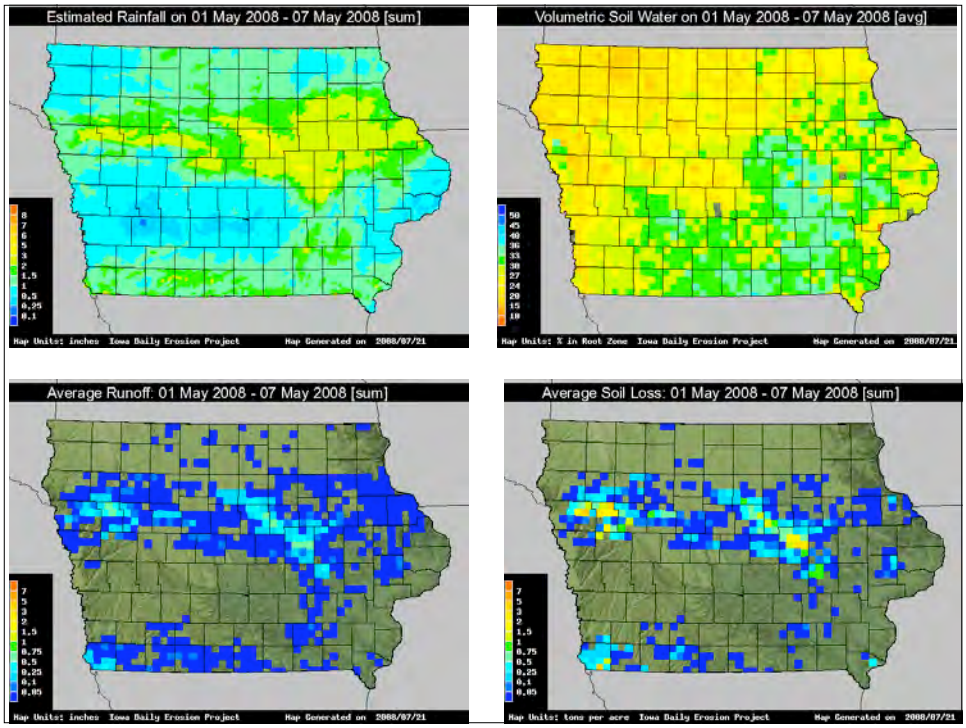

Factors Leading to Extensive 2008 Flooding in Iowa
• Very wet 2007 – 4th wettest in 135 years
• Long, cold 2007-2008 winter – 21st coldest, 8th wettest
• Record snowfall in eastern Iowa
• Persistent snowpack into March 2008
• A cold and wet spring -2nd wettest April
• A record wet 15 days May 29-June 12

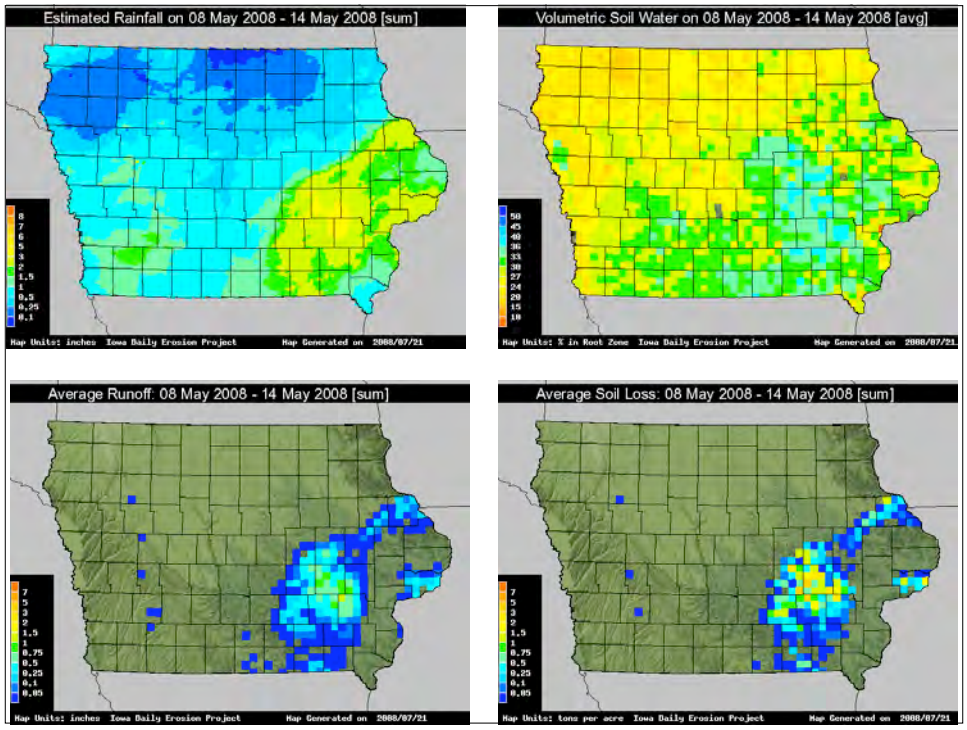

State Climatologist, Iowa Dept. of Agriculture & Land Stewardship
PRELIMINARY COUNTY PRECIPITATION ESTIMATES, MAY 29 - JUN 12, 2008 (inches)
4.5
5.9
5.2
5.9
5.9
4.6
13.8
12.9
12.1
12.2
12.5
12.1
12.8
12.6
5.2
4.4
12.8
5.1
5.7
5.1
12.3
13.2
4.5
4.7
5.0
Normal rainfall for this period is 2.30 inches
12 or more
10 to 12
8 to 10
6 to 8
6 or less

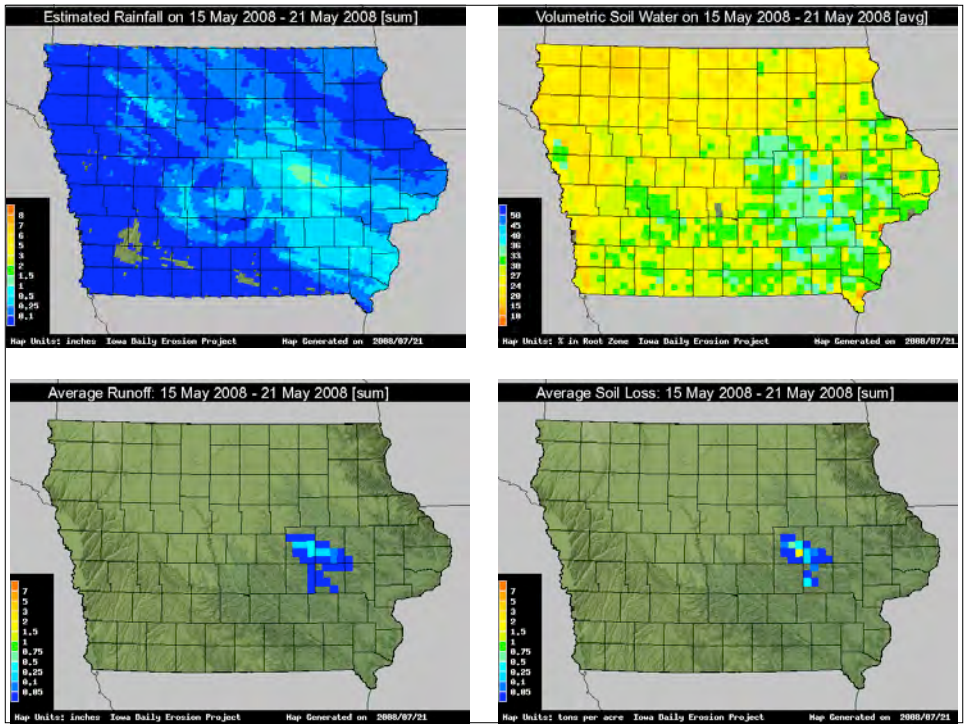

Cedar River at Cedar Rapids
Flood elevations at the USGS gage in Cedar Rapids (400 ft. upstream of 8th Ave)
Flood stage = 712.5 ft
10 highest floods
Mininum protection level for most developement
Flood Elev. (ft. NGVD)
734
731
728
725
722
719
716
713
710
1851
1929
1933
1947
1961
1965
1993
1999
2004
2008
Corps IRF
Corps SPF
FIS 100 yr
FIS 500 yr

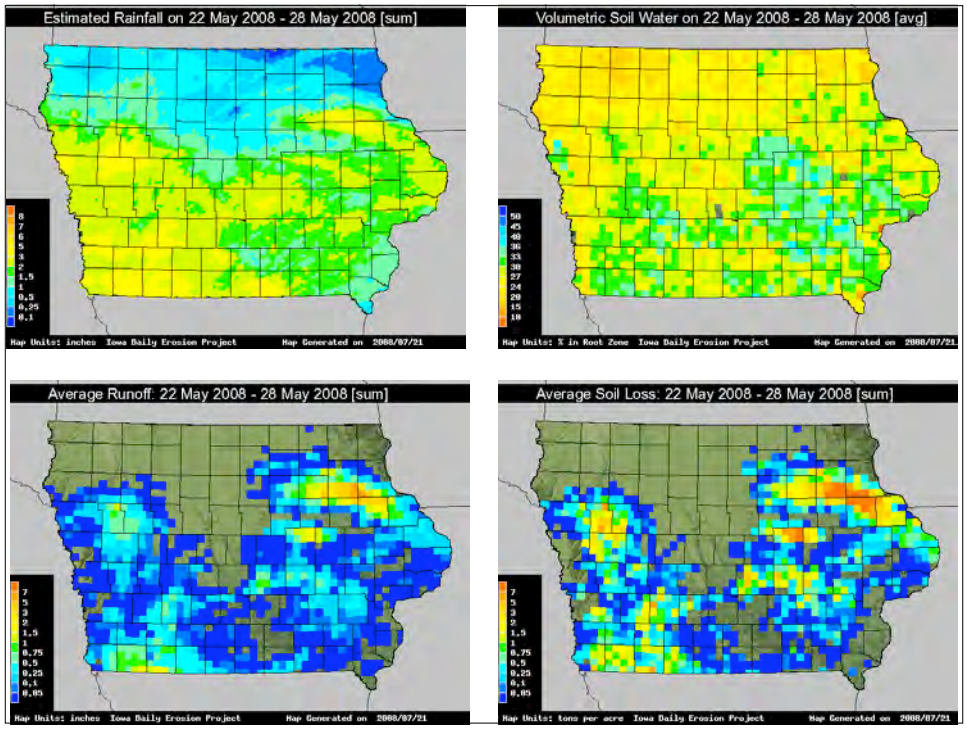
The Iowa Daily Erosion Project

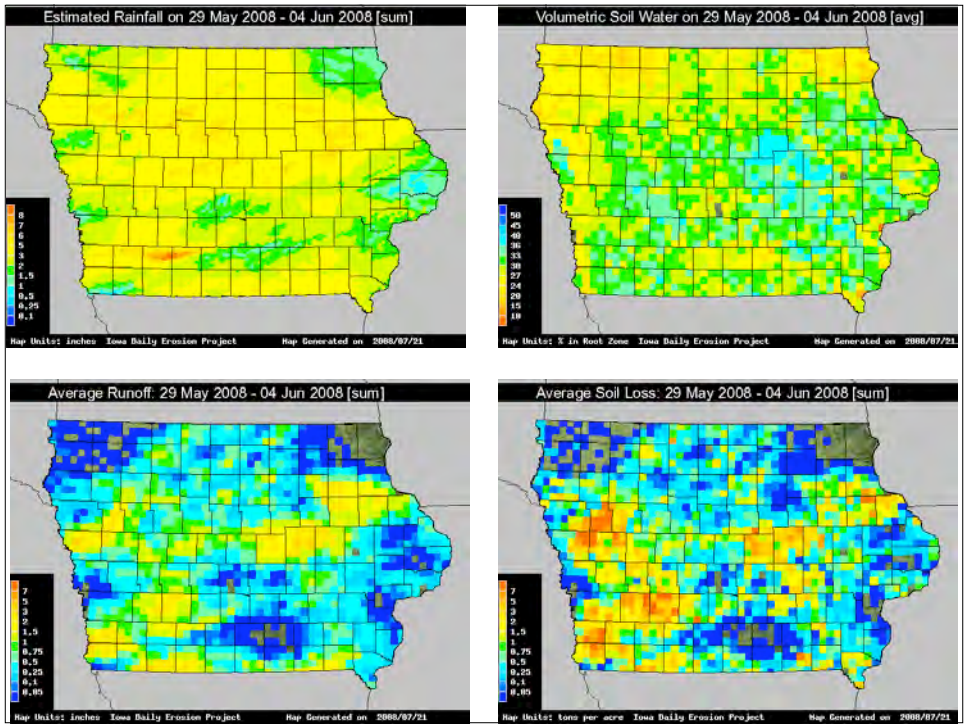
- Estimates daily runoff and erosion by linking:
- NEXRAD radar precipitation estimates
- Water Erosion Prediction Project (WEPP)
  - Soil (antecedent) moisture
  - Runoff
  - Soil erosion
- Research conducted at Iowa State University

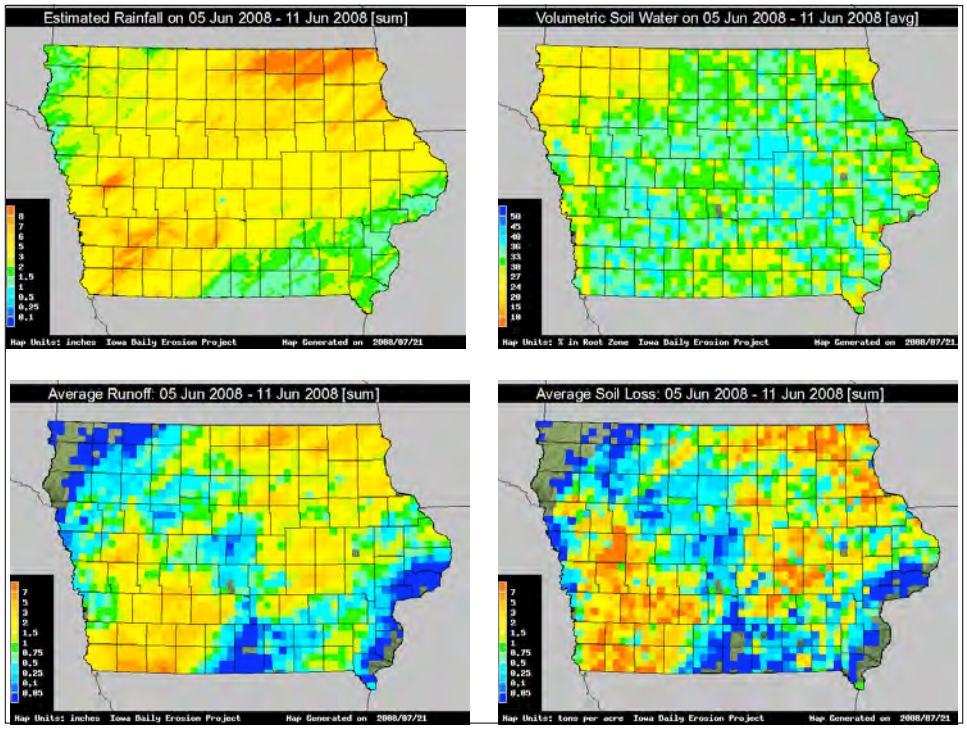


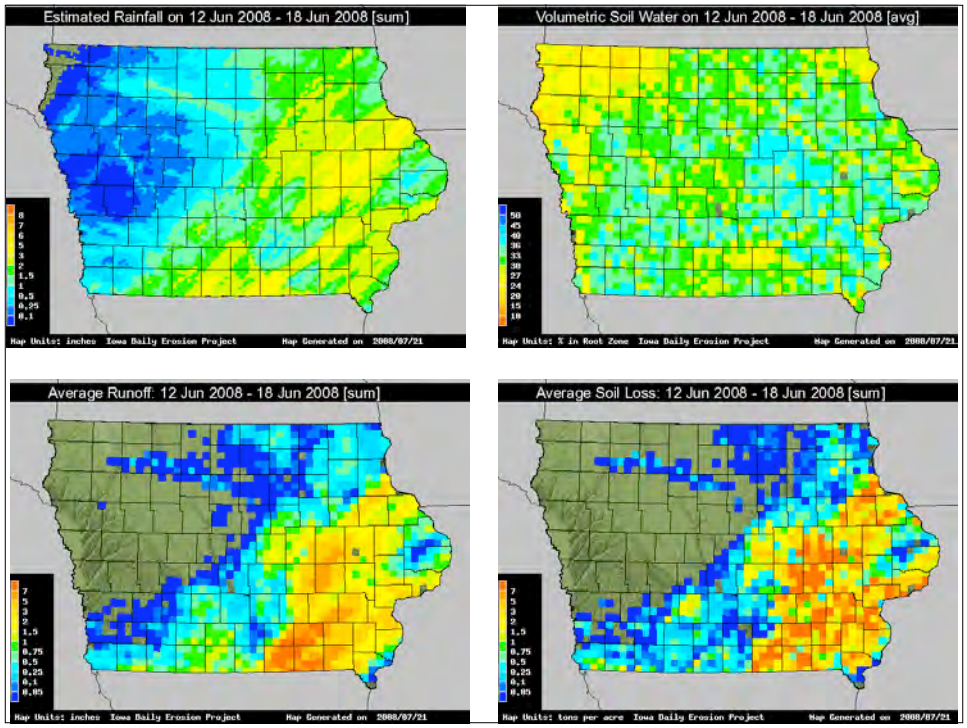

Estimated Rainfall on 08 May 2008 - 14 May 2008 [sum]
Volumetric Soil Water on 08 May 2008 - 14 May 2008 [avg]
Average Runoff: 08 May 2008 - 14 May 2008 [sum]
Average Soil Loss: 08 May 2008 - 14 May 2008 [sum]

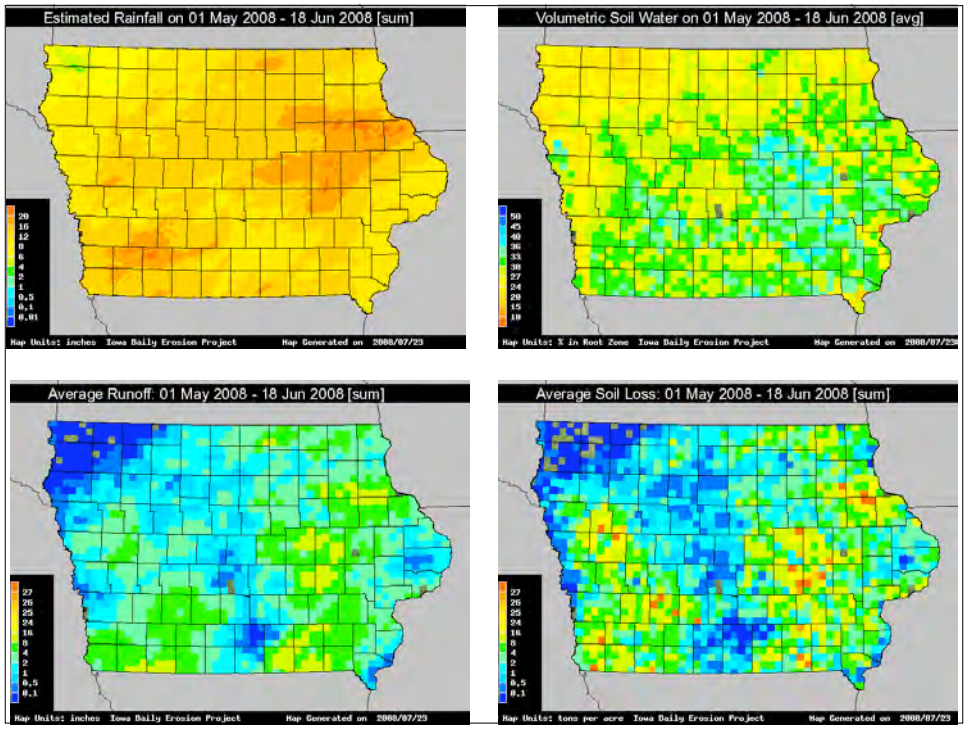

Estimated Rainfall on 15 May 2008 - 21 May 2008 [sum]
Volumetric Soil Water on 15 May 2008 - 21 May 2008 [avg]
Average Runoff: 15 May 2008 - 21 May 2008 [sum]
Average Soil Loss: 15 May 2008 - 21 May 2008 [sum]

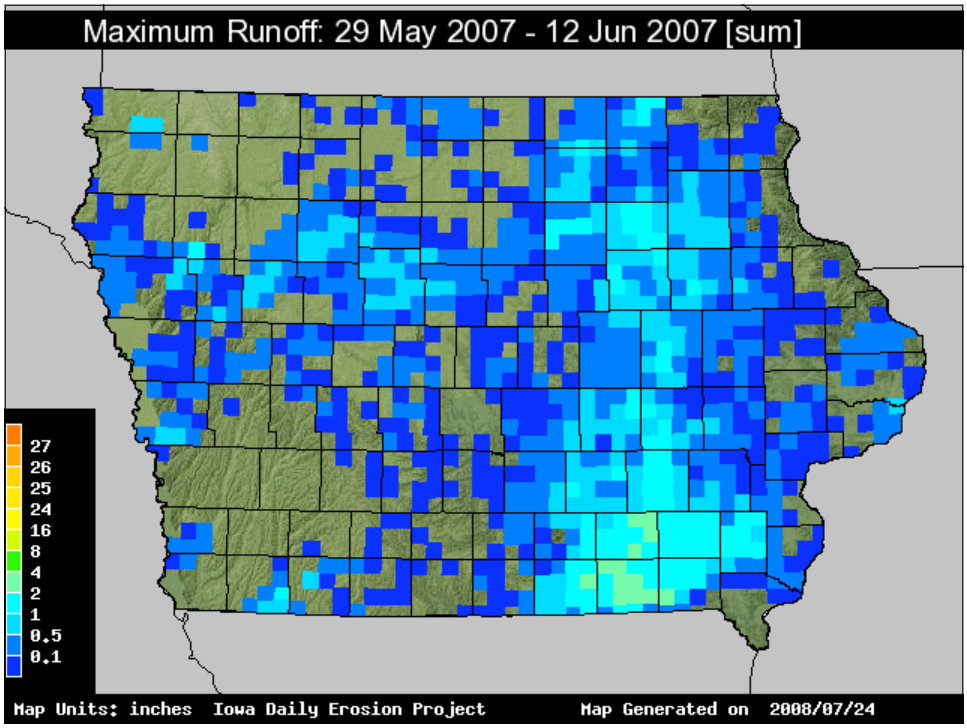

Estimated Rainfall on 22 May 2008 - 28 May 2008 [sum]
Volumetric Soil Water on 22 May 2008 - 28 May 2008 [avg]
Average Runoff: 22 May 2008 - 28 May 2008 [sum]
Average Soil Loss: 22 May 2008 - 28 May 2008 [sum]

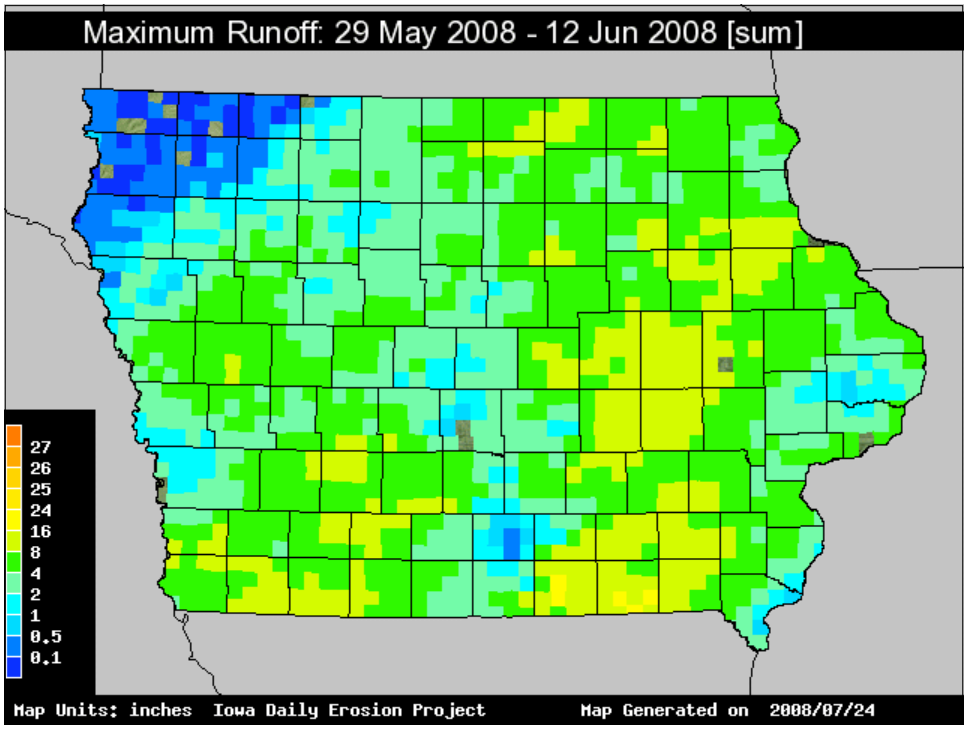

Estimated Rainfall on 29 May 2008 - 04 Jun 2008 [sum]
Volumetric Soil Water on 29 May 2008 - 04 Jun 2008 [avg]
Average Runoff: 29 May 2008 - 04 Jun 2008 [sum]
Average Soil Loss: 29 May 2008 - 04 Jun 2008 [sum]


Estimated Rainfall on 05 Jun 2008 - 11 Jun 2008 [sum]
Volumetric Soil Water on 05 Jun 2008 - 11 Jun 2008 [avg]
Average Runoff: 05 Jun 2008 - 11 Jun 2008 [sum]
Average Soil Loss: 05 Jun 2008 - 11 Jun 2008 [sum]


Estimated Rainfall on 12 Jun 2008 - 18 Jun 2008 [sum]
Volumetric Soil Water on 12 Jun 2008 - 18 Jun 2008 [avg]
Average Runoff: 12 Jun 2008 - 18 Jun 2008 [sum]
Average Soil Loss: 12 Jun 2008 - 18 Jun 2008 [sum]


Estimated Rainfall on 01 May 2008 - 18 Jun 2008 [sum]
Volumetric Soil Water on 01 May 2008 - 18 Jun 2008 [avg]
Average Runoff: 01 May 2008 - 18 Jun 2008 [sum]
Average Soil Loss: 01 May 2008 - 18 Jun 2008 [sum]


Maximum Runoff: 29 May 2007 - 12 Jun 2007 [sum]
27
26
25
24
16
8
4
2
1
0.5
0.1
Map Units: inches Iowa Daily Erosion Project
Map Generated on 2008/07/24


Maximum Runoff: 29 May 2008 - 12 Jun 2008 [sum]
27
26
25
24
16
8
4
2
1
0.5
0.1
Map Units: inches
Iowa Daily Erosion Project
Map Generated on 2008/07/24

2008 Flood Damage Assessment Survey

- Sent to all 100 soil and water conservation districts in Iowa
- Survey sponsored by the Division of Soil Conservation and NRCS
- Sent June 18, 2008
- Responses due to the Division of Soil Conservation by June 27, 2008
- Responses were to cover 2008 storm damage

2008 Flood Damage Assessment Survey--Results

- Estimated acres suffering severe damage

20 tons per acre soil erosion: 2,284,000 ac.
Bottomland scouring: 636,000 ac.

2008 Flood Damage Assessment Survey--Results

- Percent of practices that operated properly

Grass Waterways	55%
Terraces	83%
Grade Stabilization Structures/ Water and Sediment Control Basins	90%

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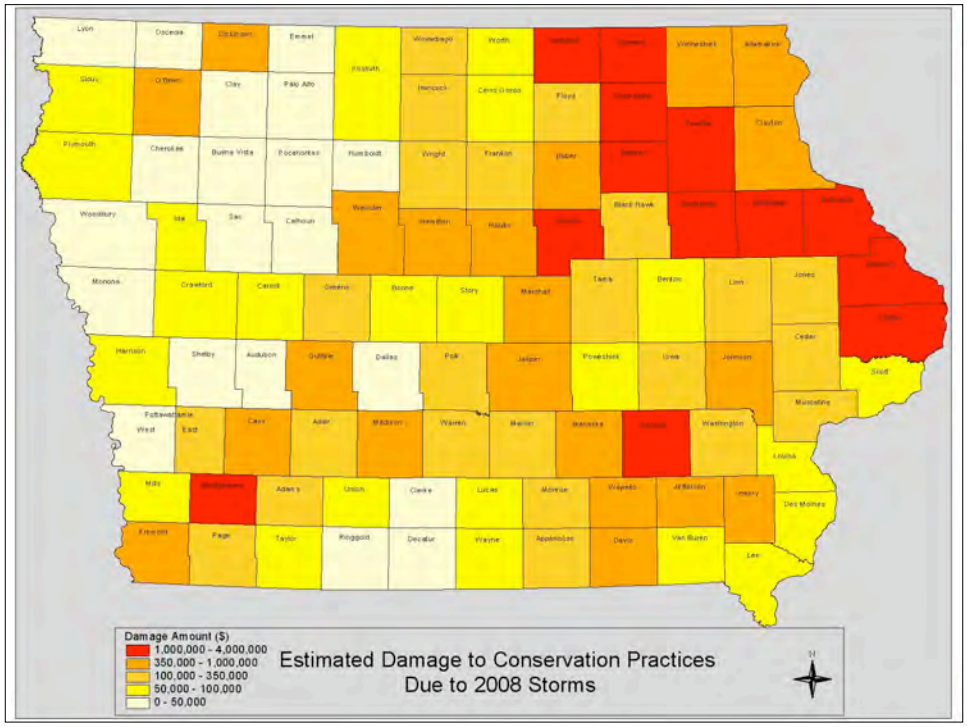
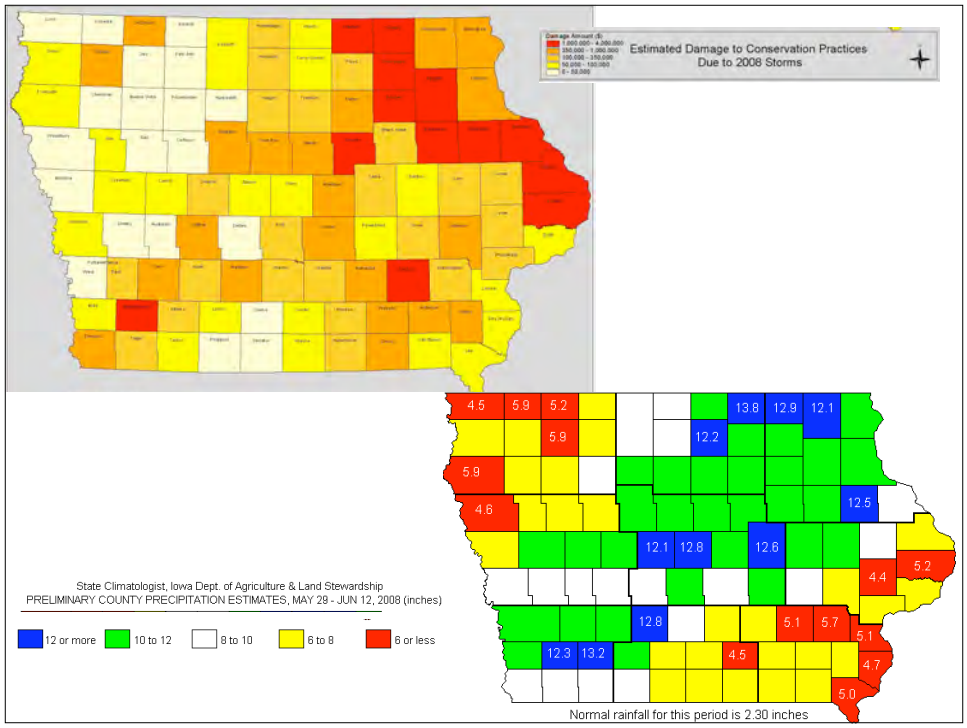
- Long term no till showed fewer signs of erosion and runoff than any system using tillage
- Fields with combinations of two or more conservation practices performed better than fields with a single practice

Key Observations of Field-Level Conservationists (cont.)

- Practices installed and maintained to NRCS standards and specifications generally functioned and operated as designed and withstood the storms
- Maintenance of conservation practices, particularly waterways, was important to their success.


Damage Amount ($)
1,000,000 - 4,000,000
350,000 - 1,000,000
100,000 - 350,000
50,000 - 100,000
0 - 50,000
Estimated Damage to Conservation Practices
Due to 2008 Storms


Estimated Damage to Conservation Practices
Due to 2008 Storms
State Climatologist, Iowa Dept. of Agriculture & Land Stewardship
PRELIMINARY COUNTY PRECIPITATION ESTIMATES, MAY 29 - JUN 12, 2008 (inches)
12 or more
10 to 12
8 to 10
6 to 8
6 or less
4.5 5.9 5.2
5.9
5.9
4.6
13.8 12.9 12.1
12.2
12.5
12.1 12.8
12.6
4.4
5.2
12.8
5.1 5.7 5.1
12.3 13.2
4.5
4.7
5.0
Normal rainfall for this period is 2.30 inches

Lessons Learned – Direction for the Future

1. Consider “hydrologic footprint” of all actions
2. Propose new initiatives for water storage & infiltration
3. Accelerate adoption of no-till/residue management for erosion, soil quality, & infiltration
4. Expand “conservation systems approach”
5. Increase focus on practice maintenance
6. Renewed focus on planning at the farm/watershed level

Build a *“Culture of Conservation”*!


Chuck Gipp, Director
Division of Soil Conservation
Iowa Department of Agriculture and Land Stewardship
Chuck.Gipp@IowaAgriculture.gov
www.IowaAgriculture.gov

Presentation by Harold Hommes
Iowa Department of Agriculture and Land Stewardship

Wapello, Iowa – Rebuild Iowa Advisory Commission Meeting
August 5, 2008

The Iowa Department of Agriculture has been involved in this catastrophic event since its inception and we will continue to assist in recovery and rebuilding efforts to the maximum of our capabilities.

First of all, a general outline on some of the agricultural sub-sectors:

On Farm Losses:

- **Crop/Grain Impacts:**
  - At height of flooding 10% of corn acres and 20% of soybean acres were yet to be planted or needed replanted. Totals 3.3 million acres
    - Some crops have been replanted, actual area lost is significantly less but we don't have good numbers on current acres lost. Some replants have since been drowned out and many replants will need a late frost to mature.
    - Likely damage to crops damaged that were not drowned out. Full impact will not be known until harvest.
    - Crop conditions have improved since mid-June
  - Grain and grain storage facilities
    - Nearly ½ Million Bushels of grain was relocated prior to flooding
  - Fluid inventories of antifreeze, hydraulic oil, diesel, gasoline and similar products
  - Seed that was stored for pending planting
  - Agro-chemicals and fertilizer inventories
  - Hay and Pasture Losses
  - Livestock feed inventories
  - Or a combination of the above, and so on.
  - 109 rural sites inundated in the Oakville Bottoms area alone

- **Livestock Losses:**
  - Most livestock losses appear to be limited to the areas between Columbus Junction and Oakville with some losses further South towards the Burlington area. From information we obtained from USDA's Veterinary Services Division of APHIS, about 3100 head of lost swine have been recorded with another 500 to 1000 head estimated to be lost or are now essentially feral swine. All in all, this is much lower than earlier estimates and credit must be given to area farmers and their neighbors who moved in excess of over 37,000 animals out of harms way before the flooding.
  - We are not aware of any beef cattle losses. However, we are certainly aware that there were several cattle feeding and dairy operations and their facilities that were inundated.
  - The Iowa DNR has indicated that of 21 animal feeding operations, there were 14 small animal feeding operations (SAFO's) and seven permitted confined animal feeding operations (CAFO's).
  - Anecdotal losses were reported scattered in other areas but those have been difficult to confirm

Page 2

- Infrastructure
  - Transportation damage
    - Barges
    - Rail
    - Secondary roads
  - Processing plant damage
    - Ethanol
    - Elevators
    - Meat processing plant

All of the above limit Farmers marketing options

- Conservation
  - Over half (55%) of Grass waterways worked to slow water and prevent erosion
  - 83% of terraces worked properly
  - 90% of the Grade Stabilization Structures and Sediment Control Basins worked
  - Thousand of these structures were damaged
    - Early estimates indicate about $40 million in damage to these structures

Additional information is attached

Retail Agri-business's:

- Losses seem to be heaviest in the areas of grain storage and handling facilities. Numerous upright and flat storage facilities have failed causing grain and storage capacity losses. At least two major corn processing facilities and one soy-processor are still not on-line. The East Central Cooperative at Cedar Falls has alone reported over two million dollars in losses in grain and grain storage facilities.

- Fortunately, there are no known losses of permanent storage tanks such as those used for liquid or anhydrous fertilizer. There are no known solution tanks such as those used for agro chemicals lost. There were however, some limited losses of dry fertilizer and chemicals. We have begun surveying the licensed facilities to gain a better handle on the specific losses.

Pet Rescue:

- Housed over 1200 pets @ Cedar Rapids & 300 @ Iowa City
  - Dogs, cats, iguanas, ferrets, turtles, snakes, guinea pigs, rabbits, parrots, parakeets, and horses (Iowa City had Sharks!)
- IDALS managed volunteers & operations
- ALL animals evaluated by a veterinarian
  - IVRRT was activated
  - Received shots and were micro-chipped
- Private sector donated food and equipment
  - Pet smart – Iams – Eukanuba – Purina - Local businesses
- Over 50,000 volunteer hours for Cedar Rapids Shelter
  - Salvation Army fed volunteers three meals per day
- 100% of pets at Iowa City Shelter returned to owners
- 85% of pets at Cedar Rapids Shelter returned to owners

Page 3

Other Activities:

Since the advent of this event the Department has:

- Worked with the FDA to assume jurisdiction of damaged grain and its removal
- Worked jointly with USDA – Veterinary Services to locate and remove livestock from flooded areas in Oakville area (including both live and post-mortem animals).
- We have been implementing Regulatory Discretion for affected firms
- Some standard fees are being waived or deferred
- We are fully involved in support of the Rebuild Iowa Office

As a reminder rural residents that are using their own well water for home use, livestock watering or even irrigation, that, if they know or suspect that the well-head was topped, they should have the well tested. The Director of the State's Hygienic Laboratory in Des Moines has suggested that people obtain a water testing kit. The Hygienic Labs are waiving any charges for the kits and the testing. Their number is (319) 335-4500.

Unprecedented Weather Events

May 25 - Parkersburg

DNR Responds - Tornadoes

Parkersburg, Sinclair, New Hartford, Onawa…

- Park and Conservation officers
  - Traffic control
  - Search and rescue
- Field Services
  - Assess damage
  - Keep water supply and waste water treatment running
  - Establish disposal sites
    - New issue - scrap metal values

Priority One: Safety

Unprecedented Weather Events

- May 29
- The floods began
  - Following 2007 - the 4th wettest year in 135 years
  - Heavy rains from May 29 to June 12

"Virtually the same combination of factors were present in 1993"

» Harry Hillaker, State Climatologist

The Public Responds

- To keep public water and wastewater facilities safe
- To protect their neighborhoods

AmeriCorps

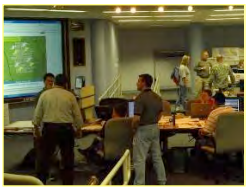
DNR Responds - Flooding

North Central, Central, Northeast, Southeast

Priority One: Safety

State Emergency Operations Center Opens – June 9

- DNR Emergency Response Team to staff
- Unified Command – Funnel all information through SEOC
  - coordinates emergency response through county coordinators
    - State
    - Federal agencies
  - Public policy through Governor's office
  - Rumor control through public information



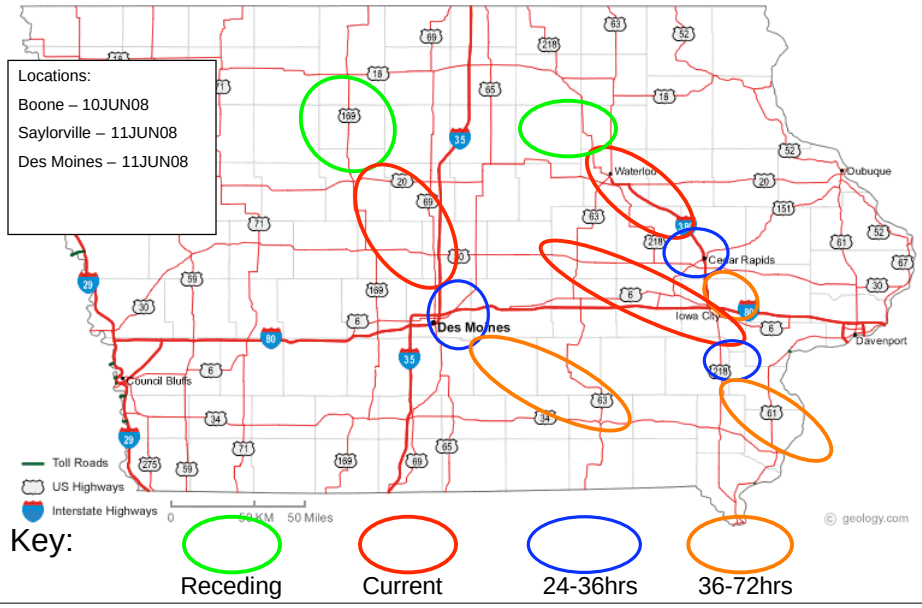
Situational Update

J5

101400JUN08

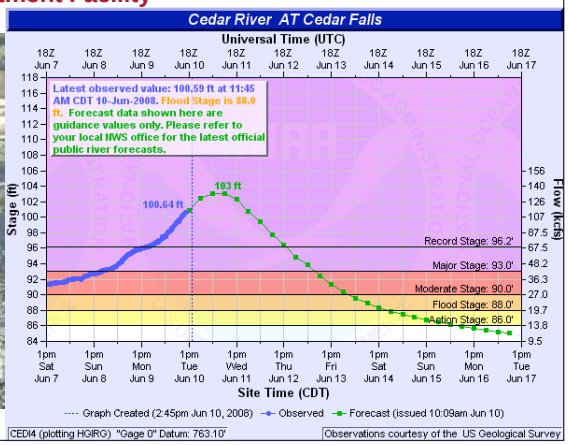
The situation remains precarious across much of Iowa. We are close to or exceeding 1993 flooding levels at several locations. We have a 45% chance of severe weather hitting Iowa starting Wednesday night continuing into Thursday night. This includes hail, tornadoes and heavy rainfall. Fortunately, the storms are predicted to be fast moving, but there will be a series of storms. This means that river crest predictions will change.

Projected Crests in AO



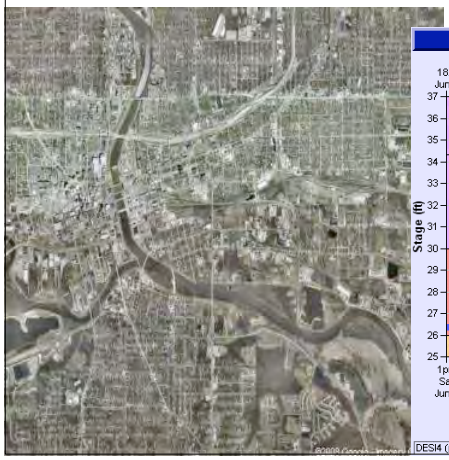
Cedar Falls – Cedar River

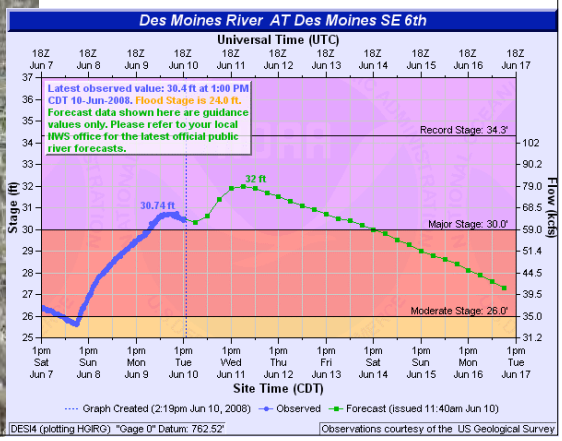
- Crest: 103 ↑ From 100.8
- DTG: 101700JUN08
- Known Impact:
  - **Parks and Residences flooded**
  - **Water Treatment Plant Surrounded** but operational – Aquifer System
    - Issues arise if pressure is lost within the system
  - **Loss of Waste Water Treatment Facility**



Des Moines – Des Moines River

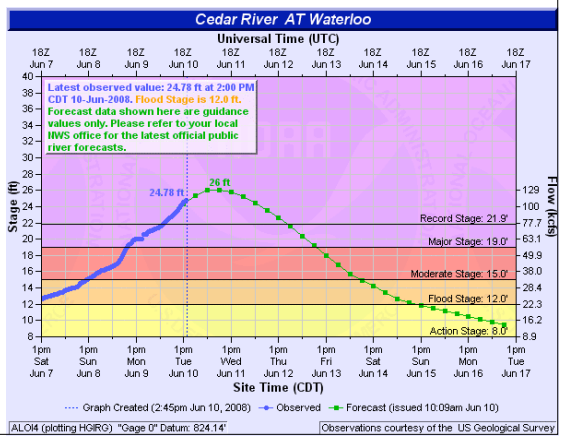
- Crest: 32.3
- DTG: 111300JUN08
- Known Affects:
  - @26.5 Euclid avenue floods along with 3600 rural acres.
  - @24.5 Levee closures begin across Saylor Road and Guthrie. (North and East of Birdland Park).
  - @24.0 **Significant residential flooding occurs**.
  - @22.0 Minor residential flooding occurs, primarily along the right bank upstream from the gage site.
- Unknown: Affects based on Spillway release





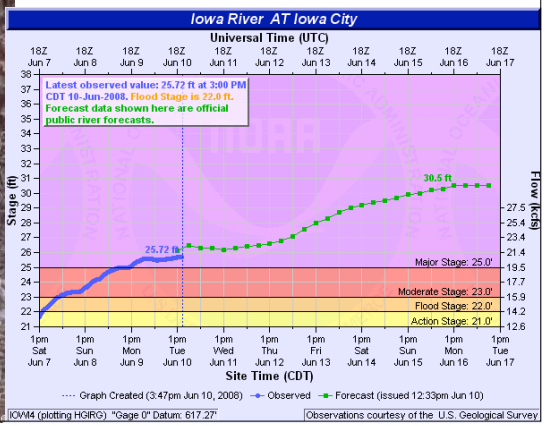
Waterloo – Cedar River

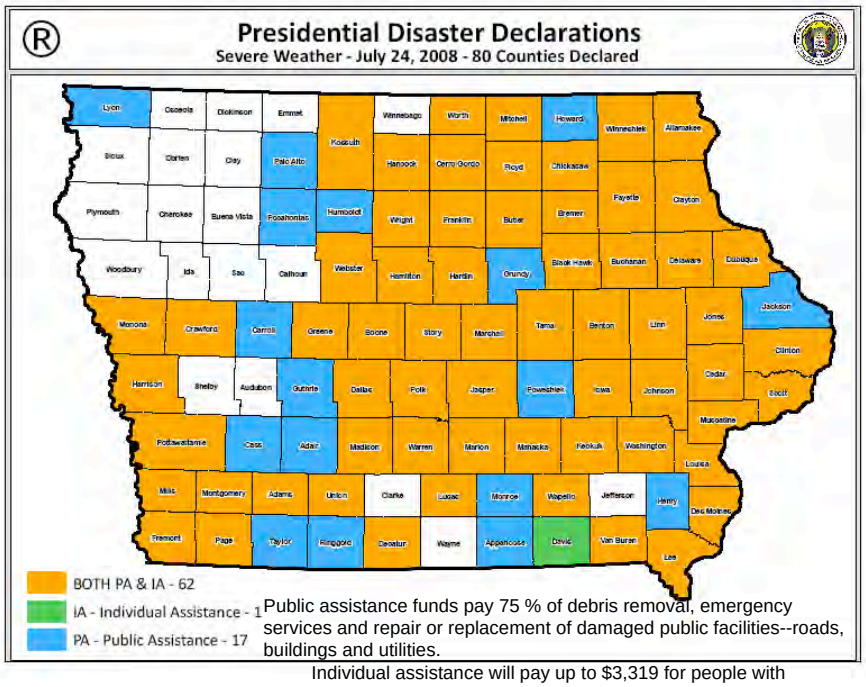
- Crest: 26 ↑ From 23.3
- DTG: 102000JUN2008
- Known Impact:
  - @**22 Water Wells (In danger)**
  - @26 Height of Levee design protection
  - @27 Height of Water Treatment Plant Protection



Iowa City - Iowa

- Crest: 30.5 ▲ From 28.8
- DTG: 161300JUN08
- Known Affects:
  - @23.5 Water **affects water treatment**
  - @25 Flooding Coralville
  - @27.0 Flood protection becomes necessary at the University of Iowa. Water affects several industrial businesses and warehouses along Commercial Drive.
  - @29.0 **Serious flood damage occurs at the University of Iowa campus**.





Public assistance funds pay 75 % of debris removal, emergency services and repair or replacement of damaged public facilities--roads, buildings and utilities.

Individual assistance will pay up to $3,319 for people with incomes up to 130 percent of federal poverty guidelines

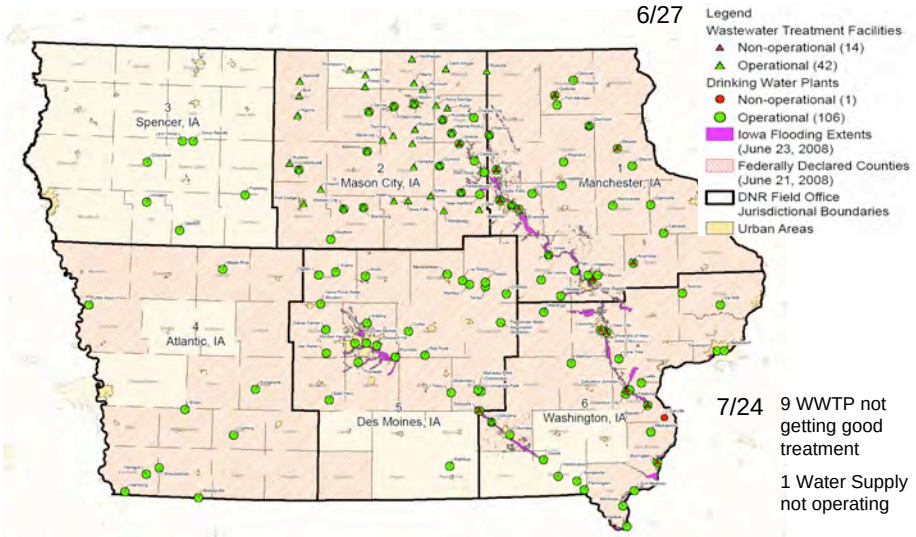
DNR Responds

- Priority 2: Keep Public Water Supplies Working

DNR Priorities

Priority 3 – Public Wastewater Treatment

Drinking Water and Wastewater Treatment Plants in Flooded Areas



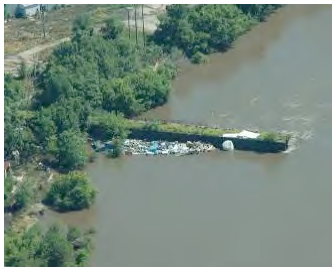
Mason City Example

- June 8 - Water treatment plant shut down due to flooding
  - 4.5 million gallon underground storage tank
  - 0.5 million gallon clear well
  - Lower part of plant
- June 9 – Clean-up began
  - No well heads submerged
  - Soft starts were damaged
  - Pumps ok, but electric controls damaged
  - Couldn't pump contaminated water to waste, because storage tanks might collapse
  - Decided to shock chlorinate
- June 10 – Found oil in test results, began pumping to tankers
- June 11 – results good, began restoring pressure
- June 12 – Pressure restored, flew water samples to Iowa City
- June 13 – all samples negative for bacteria

DNR Clean-up Priorities

4. Proper Debris Disposal
5. Safe and Proper Disposal of Underground Storage Tanks and Drums

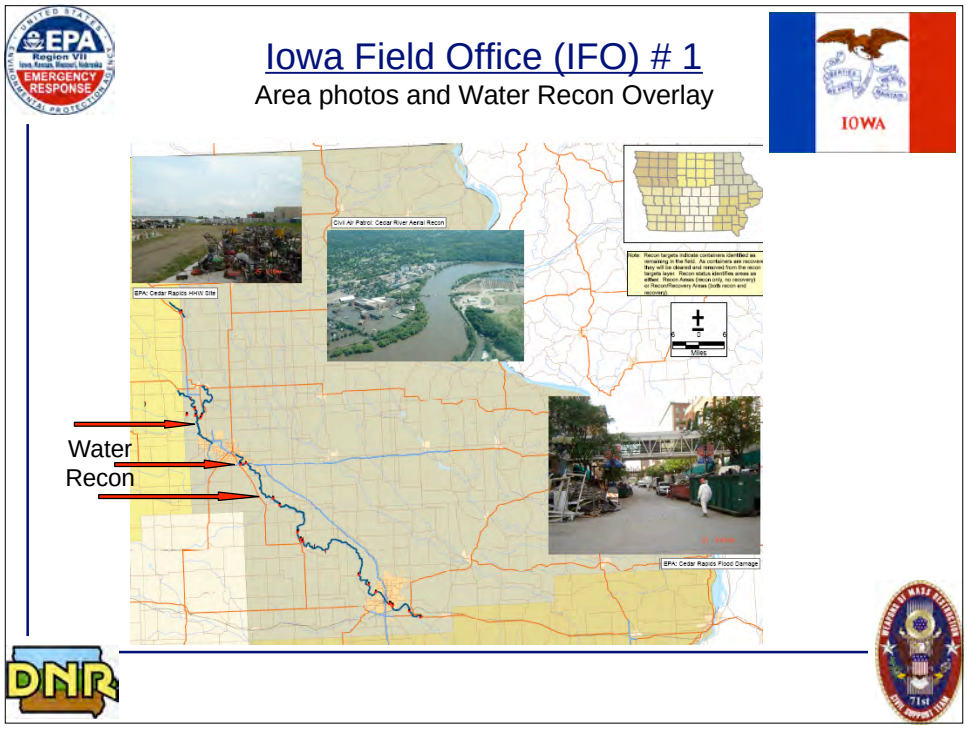
Cedar Rapids-houseboats



EPA Partnership

- Working with
  - DNR Conservation Officers
  - 71st National Guard Civil Support Team
- To retrieve orphan tanks and drums
- Brings $5.5 M to Iowa for hazardous materials recovery

USTs



Recovery of Hazardous Materials

July 2 Status Report

	Container Type								
Field Office Staging Location	LPG Tank	Cylinders	Other Large Tank >85 gal	Drum 30-85 gal	Small Container 5-30 gal	Container ≤5 gal	E-Goods	White Goods	Location Total
Branch Field Office #1	332	268	14	1193	1461	38768	4261	2757	49054
Branch Field Office #2	0	0	1	23	412	28552	0	0	28988
Branch Field Office #6	18	71	2	238	5	8947	722	1334	11337
Category Total	350	339	17	1454	1878	76267	4983	4091	**89379**

As of July 24, recovered materials included 12,000 electronic goods, 17,000 white goods and 189,000 Total Containers. Water operations mostly completed except for two fields in SE Iowa.

CONTAINER RECOVERY SUMMARY**

Container Size	LPG Tanks	Cylinders	Other Large Tanks > 85G	Drums 30-85G	Small 5-30G	<5G	E-Goods	White Goods	Totals
FO #1** (Linn Co.)	829	745	46	1,617	4,151	93,506	11,097	15,429	127,420
FO #2** (Butler Co. Bremer Co.)	3	0	5	41	838	44,999	0	0	45,886
FO #6** (Johnson Co. Cedar Co. Muscatine Co.	44	165	40	456	130	16,129	1,249	2,759	20,972
FO#5 (Des Moines and surrounding Counties)	1	14	0	24	47	1,437	4	0	1,527
Total Collected To Date	877	924	91	2,138	5,166	156,071	12,350	18,188	195,805

** These figures have changed from previous SITREPs, and reflect total counts from each of the branches.

Cedar Rapids - Wastewater

Iowa City WW

Air Quality Monitoring

- EPA using fixed monitoring equipment at 9 sites
- Outdoor air monitoring during clean-up, concerns - asbestos, open burning, disposal
  - Cedar Falls
  - Cedar Rapids
  - Fort Madison
  - Iowa City
  - Keokuk
  - Montrose
  - Parkersburg
  - Waterloo
  - Louisa County

- No exceedances for airborne asbestos
- Down to 2 to 3 sites by end of July

Water Quality Monitoring

- So far, so good
- Results from 6/9 to 6/25 show relatively low levels of *E. coli*
  - *Cedar Rapids*
    - *Upstream: 86 – 13,000*
    - *Downstream: 250 - 17,000*
  - *Des Moines*
    - *Downstream: 140 – 730*
  - *Fort Dodge*
    - *Downstream: 170 – 3,200*
  - *Iowa City*
    - *Downstream: 170 – 2,200*
  - *Marshalltown*
    - *Downstream: 20 – 170*
- *Important for public – the fish are safe to eat!*

Levee Break – Maquoketa River north of Manchester

Dave Allen, DNR floodplains
Mark Nahra, Delaware County Engineer

Solid Waste

- Working with landfills – need additional capacity
- Emergency Plans are needed
- Coordinating with EPA on demanufacturing of applicances
- FO staff working directly with EPA staff – coordinating issues between locals and federal staff

REVIEW OF IMPACT FROM STATEWIDE DISASTERS
Conservation and Recreation Division
August 1, 2008

TOTAL CURRENT ESTIMATED FISCAL IMPACT TO DIVISION: $11,905,000

State Parks Bureau

- 24 state parks have been impacted to varying degrees by floods, heavy rainfalls, and strong winds. Major impacts include completely damaged electrical transformers, electrical pedestals in campgrounds, and lift stations for waste water, erosion of roads and trails, undermining of parking lots, wash-outs around buildings foundations, downed trees and limbs, displaced and damaged picnic tables and docks, water damage in park buildings, delayed construction, revenue producing recreation areas under water, and sediment left behind after floods receded. Preliminary damage estimate is $3,600,000. At this point in time, two park campgrounds remain closed, and access is limited in several other parks.
- In addition, the bureau has seen a decrease in camping receipts and refunds for reserved camping, lodge, shelter and cabin rentals for a current total of an estimated $1,175,000 in lost revenue.
- People have been unable to use state parks, either partially or in total. Family reunions, large events and weddings had to find other locations for their respective events.
- Parks staff have found it necessary to close some portions of the trail systems in individual parks, and it is expected that citizens will be expecting these trails to be repaired and reopened quickly.
- Parks projects involving some new or renovated structures may have to be put on hold, pending more immediate repairs. This will cause some pushback from groups that will view this delay as unacceptable.
- Approximately 15 families that were evacuated from their homes in Palo camped at Pleasant Creek Recreation Area, and the 14-day maximum stay was waived; Geode State Park accommodated residents of Illinois that commuted daily on HWY 34 bridge over the Mississippi River to work in Iowa until the road was repaired and reopened.
- **Total Current Estimated Fiscal Impact to Parks Bureau: $4,775,000**

Wildlife Bureau

- A district by district assessment was taken of structures such as dikes, levees, water control structures, parking lots, boat ramps, docks, culverts, signage, roads, buildings, etc. with a $4,000,000 estimated impact at this time.
- This bureau manages croplands (about 35,000 acres) as well as natural habitat lands within the public land boundaries. The current estimate is $1,000,000 in lost cropping revenue.
- In terms of wildlife, the mammals generally survive in rising water and are able to move out of harms way except in flash flood situations. Ground nesting birds have a more difficult time, and a significant impact is expected on pheasants, quail, and other game and non-game ground nesting birds. (An accurate quantitative impact on the pheasant population is not expected until after August 15, 2008, and that will impact projected revenue in hunting license sales if the population shows a drastic decline as expected.). The good news is that amphibians are expected to have thrived under the current conditions.
- **Total Current Estimated Fiscal Impact to Wildlife Bureau: $5,000,000**

Fisheries Bureau

- Fisheries Bureau has seen a dramatic decline in fishing license sales during May, June and July (approximately 40,000 licenses or $760,000 lost revenue).
- Two trout hatcheries (Big Spring/Elkader and Manchester) sustained damage to buildings and loss of fish. Estimated repairs to just these two areas are estimated at $500,000.
- Damage to fishing related infrastructure at lakes and streams is statewide. Damage and cost estimates are still coming in as water has not receded in all areas. Impacts include shoreline erosion, lost or damaged fishing jetties, constructed in-stream trout habitat lost, trout stocking access roads impaired, universally

accessible fishing access sites destroyed, informational signs gone, boat ramps undercut, etc.—estimated at $500,000.
- Recreational angling and boating opportunities have been diminished by the damage to public access sites and boat ramps and closure of some lakes and streams to boating.
- Over 2,000 staff hours were committed to clean-up.
- Iowa will be dealing with flood impacts to streams and rivers for the next several years as attempts are made to repair "damage", which may better be described as "change" in many cases.
- Staff time spent on flood mitigation is staff time spent away from other activities that serve the public.
- Long-term impacts to aquatic resources and fishing opportunities are varied, with some positive impacts and some negative impacts from flooding. Trout stocking will have to be reduced 20% the remainder of 2008.
- **Total Current Estimated Fiscal Impact to Fisheries Bureau: $1,760,000**

Law Enforcement Bureau
- The District Offices located at Manchester was inundated with flood waters and incurred expenses of $55,000 to repair.
- Between the tornadoes in Butler and Buchanan counties and the Little Sioux Boy Scout Camp, and the 2008 statewide floods, officer full-time and part-time hours amounted to over $55,000 of salary costs going to disaster assistance helping with search and rescues, traffic control, patrol for looters, providing first aide, assisting in evacuation efforts (especially with boat the department boat fleet), environmental impact assessment efforts, and security efforts.
- Normal recreational activities that our customers typically enjoy such as boating and fishing have been replaced with clean-up efforts and water levels too high for recreational boating or fishing opportunities.
- Most of the bureau's efforts deal with providing law enforcement support immediately after the disaster strikes. Help includes providing boats/staff to EPA, National Guard, and DNR EPD staff to locate hazardous materials and orphan drums that have been displaced by the various disasters. Some officers have been trained in Critical Incident Stress Debriefing (CISD) and are available for helping emergency workers (law enforcement, fire fighters, EMS, etc.) by providing staff for debriefings after the disasters.
- **Total Current Estimated Fiscal Impact to Law Enforcement Bureau: $110,000**.

Forestry Bureau
- This bureau suffered damage during the tornadoes early in the season. The Forestry Bureau estimates $250,000 in damage costs incurred during the tornadoes.
- The Forestry Bureau is also looking at ways to help Iowans with replacement trees across the state. It has instituted a $10,000 grant program to help replant wind breaks, and is working on a way to supply stock from the State Forest Nursery to the citizens of Iowa.
- **Total Current Estimated Fiscal Impact to Forestry Bureau: $260,000**

Conservation & Recreation Division
In general, the need for adequate, consistent funding for Iowa public lands management and outdoors recreation is reemphasized with the flood and tornadoes of 2008. The department will do everything it can to keep parks, state forests, fishing lakes and wildlife areas open and accessible to the public. However, many needed projects will be delayed into future years. The department will have to communicate with many stakeholder groups who have been patiently waiting for their local lake or park to get the necessary funding to complete their park project. Roads, boat ramps, fish hatcheries, etc. will be repaired within the abilities of the department's budget. Prioritization and reworking budgets and engineering projects will be necessary.

TOTAL CURRENT ESTIMATED FISCAL IMPACT TO DIVISION: $11,905,000

Disaster Debris Impacts to Iowa Landfills

Modern landfills are well-engineered facilities that are located, designed, operated, and monitored to ensure compliance with state and federal regulations. Municipal waste landfills must be designed with liners and liquid collection systems to protect the environment from contaminants which may be present in the solid waste stream.

While a particular landfill may have many years of overall capacity, it may only have a small portion of that capacity constructed and readily available for waste disposal. This is because it is not economically feasible to construct all of the available capacity at one time. There are 45 municipal waste landfills operating in Iowa. These landfills have an average overall capacity of 30 years with about 3-5 years of that capacity currently available. With waste flow rates to these landfills remaining steady over the years it has helped with long-term planning and construction schedules.

When a disaster occurs, waste flow rates to the landfill increase dramatically.

City	Before Disaster	After Disaster
Cedar Rapids	600 tons/day	2,500 tons/day
BlackHawk Co.	800-900 tons/day	1,450 tons/day
Iowa City	400 tons/day	850 tons/day

All of this extra waste leads to a decrease in the overall projected lifespan of a landfill. This also means that the construction schedule is accelerated and the size of the disposal area to be constructed becomes bigger to handle the increased waste flow.

The cost to construct a 2-acre disposal cell, average size for most Iowa landfills, is approximately $600,000. This includes excavation, liner and leachate collection system installation and internal controls (manholes, sumps, wells, etc.).

After this most recent flood disaster, several impacted areas realized that their landfills were not going to have enough available disposal capacity so other options were explored. Some landfill agencies diverted all flood debris to a neighboring permitted landfill with more capacity. This can be cost prohibitive though depending on the distance to transport the waste. It also means that the flood debris sits on the curb longer. Others made requests to reopen old landfills.

When the Cedar Rapids/Linn County Solid Waste Agency realized that they would not have enough disposal capacity, they requested to reopen a landfill within the city that closed in 2006. The landfill closed because it did not comply with federal and state regulations which require a liner system. Reopening the landfill was not a popular decision but due to the proximity of the closed landfill to the areas of the city most devastated and the lack of capacity at the open landfill, the decision was made to allow

the closed landfill to reopen. Other counties have asked to do the same but only one other closed landfill in Des Moines County, has received approval to reopen.

There are economic impacts that come with reopening a closed landfill. The U.S. EPA has acknowledged individual state's authority to reopen closed landfills during emergency situations but they must close at the earliest opportunity consistent with current state and federal requirements. All closed landfills did so under old regulations that no longer exist. There are significant costs to consider when closing under current state and federal regulations. For example, to close the reopened landfill in Cedar Rapids, it could potentially cost the solid waste agency $3,500,000. These costs are associated with placing a new soil cap over the waste, installing additional groundwater and gas monitoring wells, and sampling/monitoring those wells for contaminants. These costs do not include any corrective action when groundwater contamination is found.

There are also environmental impacts associated with reopening a closed landfill. Adding more waste means more contamination. Since these closed landfills do not have a liner, that contamination can make its way to the groundwater below. This contamination can be in the form of a liquid (leachate) or a gas (methane). Both are costly to remediate and can take many years to clean up. In extreme cases, the waste must be dug up and relocated to a lined disposal area.

Floodwater and Sediment Monitoring

Mary Skopec
Watershed Monitoring and Assessment Section
Iowa DNR

Flood Monitoring

- WMS contacted University of Iowa Hygienic Laboratory and USGS for flood monitoring assistance.
- Began intensive flood water monitoring on June 9th.
- Weekly samples from ambient sites located around major urban areas; supplemented sites later.
- Daily bacteria sampling downstream of Cedar Rapids, Prospect Park in Des Moines.
- Preliminary Results from UHL reported within a week of initial sampling and currently June, July, and first week of August reported.
- USGS results expected later this fall.

25 Regular Sample Locations

Cedar River at Waterloo US
Cedar River at Waterloo DS
Wapsipinicon at Independence
Shell Rock at Shell Rock
Winnebago, Mason City US
Winnebago, Mason City DS
South Raccoon River at Redfield
Raccoon River at Des Moines US
Des Moines River at Des Moines US
Des Moines River at Des Moines DS
East Nishnabotna near Shenandoah
Boone River near Stratford
Iowa River at Iowa City US
Iowa River at Iowa City DS
Des Moines River near Keokuk*
Iowa River at Columbus Junction
Iowa River at Marshalltown
North Raccoon River near Sac City
Des Moines River at Ottumwa US
Des Moines River at Ottumwa DS
Lizard Creek at Fort Dodge US
Des Moines River at Fort Dodge US
Des Moines River at Fort Dodge DS
Iowa River at Wapello
Iowa River at Oakville*

US = upstream; DS = downstream: * not a regular ambient site

Additional Sample Locations

- Streams
  - Cedar River at Sutliff
  - Camp Cardinal Creek Coralville
  - Iowa River at Hwy 6 Iowa City
  - Prospect Park Des Moines River (bacteria only)
- Sediment
  - Cedar Rapids
  - Coralville/Iowa City
  - Waterloo/Cedar Falls
  - Oakville

Analytes (~ 140 individual)

• Oil and Grease	EPA 1664
• Total Extractable Hydrocarbons	UHL OA-2
• GC/MS Volatiles	EPA 8260
• Gasoline	UHL OA-1
• Semi-volatiles	EPA 8270, PREP EPA 3510
• N & P-Containing Pesticides	EPA 507, EPA 508
• E. coli	EPA 1603
• CBOD5	SM 5210B
• Metals	EPA 200.7 or 200.8
• Ammonia Nitrogen as N	LAC10-107-06-1J
• Nitrite + Nitrate as N	EPA 353.2
• TKN	LAC10-107-06-2E
• Orthophosphate as P	LAC10-115-01-1A
• Total Phosphate as P	LAC10-115-01-1D
• Total Dissolved Solids	SM 2540C
• Total Suspended Solids	USGS I-3765-85
• Total Volatile Suspended Solids	EPA 160.4

Results to Date

- Nearly 60,000 individual analyte results as of early August 2008
- Results are preliminary and subject to change as the laboratory finishes data quality assurance/quality control checks.

Water Samples

- Most analytes not detected in floodwaters
  - June 85% non-detection rate
  - July 91% non-detection rate
  - August 90% non-detection rate (1st week)
- Detections of nutrients, bacteria, common herbicides
- Isolated detections of metals, volatiles, semi-volatiles

June Water Samples

- Acetochlor
  - 0.05 ug/L to 2.4 ug/L
- Atrazine
  - 0.1 to 3.6 ug/L
- Total Ammonia
  - 0.05 to 0.25 mg/L
- Nitrate
  - 3 to 13 mg/L
- Total Phosphate
  - 0.13 mg/L to 3.3 mg/L
- E. coli
  - 10 cfu/100ml to 380,000 cfu/100ml

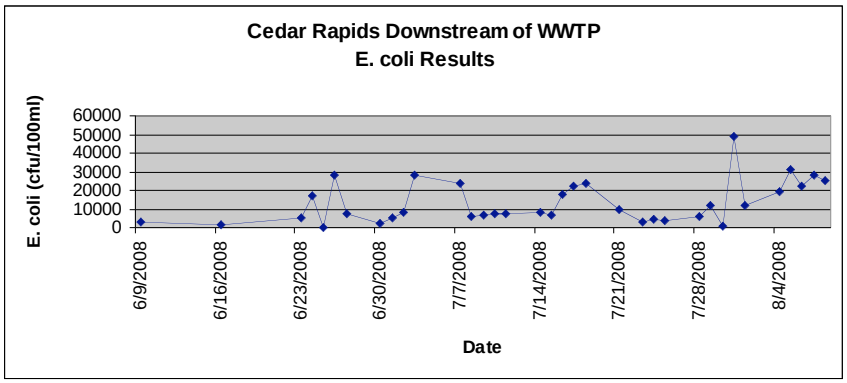
July Water Samples

- Acetochlor
  - 0.05 ug/L to 0.71 ug/L
- Atrazine
  - 0.072 to 2.8 ug/L
- Total Ammonia
  - 0.06 to 0.14 mg/L
- Nitrate
  - 0.56 to 14 mg/L
- Total Phosphate
  - 0.07 mg/L to 2.8 mg/L
- E. coli
  - 10 cfu/100ml to 280,000 cfu/100ml

August Water Samples

- Pesticides not completed yet
- Ammonia
  - Not detected
- Nitrate
  - 4.1 mg/L to 5.6 mg/L
- E. coli
  - 10 cfu/100ml to 31,000 cfu/100ml

Cedar Rapids Wastewater



Sediment Samples

- Most analytes not detected
  - June – August (6th) 96% non-detections
- Bacteria levels ranged from very high to low depending on the site conditions
  - 2 MPN/g to >24,000 MPN/g in Marshalltown

Sediment Samples

- Isolated detections of various chemicals
  - 2-Butanone in Cedar Falls, Ottumwa, Oakville (11-15 ug/kg).
  - Toluene (7-1500 ug/kg)
  - 4-Methylphenol
  - bis(2-Ethylhexyl)phthalate
  - Chlorpyrifos
  - Styrene

Sediment Samples

- Consistent Detections of:
  - Metals
    - Arsenic, Chromium, Copper, Lead, Zinc
  - Motor Oil
    - 8 to 1900 mg/kg
  - Acetone
    - 10 to 66 ug/kg
  - Atrazine
    - 0.01 to 0.039 ug/kg


Oakville
Area of special concern


Oakville Sediments
Highest levels of motor oil, zinc, chromium, atrazine, metolachlor, copper

Air Quality Concerns with the Burning of Disaster Debris

The DNR recognizes the need to clean-up properties to allow for the rapid reconstruction in the recovery phase of a disaster. Making sure that we do not add to the already increased risks to public health and the environment caused by the disaster must guide the clean-up efforts.

Two elements of disaster recovery pose a particular risk to the air quality of a community. First, burning disaster debris is very likely to release fine particles in quantities well over federal and state health standards. These standards are set to protect the public health and welfare of all individuals, but especially those with more sensitive respiratory systems including children, the elderly, and those with compromised respiratory systems or heart disease. Other toxic fumes can be released when plastics, PVC piping, carpet, and other materials are burned. Exposure to emissions from burning can trigger asthma attacks, cause increases in hospitalization of the elderly and sick, and increase the incidence of heart attacks.

Second, is the heightened risk of exposure to the known carcinogen Asbestos. Although asbestos manufacture was banned in the United States decades ago, construction materials commonly used in even the newest buildings often contain asbestos as do many older structures. Asbestos fibers when burned do not become inert, and are widely distributed when sent aloft in smoke from fires. Limited inhalation of airborne asbestos can cause asbestosis or mesothelioma (lung cancer).

It is because of these risks that burning of disaster material is discouraged and in many cases prohibited by state and federal law. The DNR recognizes the need to assure the quick clean-up from the disaster to provide for the rapid re-building of communities. The DNR, in cooperation with the United States Environmental Protection Agency (U.S. EPA), can arranged for some flexibility in the implementation of federal laws designed to protect the public from asbestos exposure, and to allow for the quick but safe removal of asbestos containing and contaminated materials from these disaster sites. Buildings that have been damaged and are structurally unsound and in danger of imminent collapse are considered to be potentially contaminated with asbestos and should be landfilled. For buildings that can be renovated or have the asbestos containing material removed before renovation, during disaster clean-ups the DNR will negotiated with U.S. EPA a “No Action Assurance” letter that will allow a waiver of notification requirements. Inspection requirements can also be waived if all material removed is treated as asbestos containing materials.

Disaster rubbish, not potentially contaminated with asbestos containing material can be burned. DNR recommends that established municipally run burn sites be used to stage burns. In addition, Iowa Administrative rules allow for very limited burning of demolished buildings (567 Iowa Administrative Code paragraph 23.2(3)“j”). However, U.S. EPA has retained authority to enforce against this provision as they have taken the position that this provision of Iowa Code and Rule it is in violation of federal law due to the potential for exposure of the public to high levels of air pollution.

CONTAINER RECOVERY SUMMARY**

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FO #2** (Butler Co. Bremer Co.)	3	0	5	41	838	44,999	0	0	45,886
FO #6** (Johnson Co. Cedar Co. Muscatine Co.	44	165	40	456	130	16,129	1,249	2,759	20,972
FO#5 (Des Moines and surround-ing Counties)	1	14	0	24	47	1,437	4	0	1,527
Total Collected To Date	877	924	91	2,138	5,166	156,071	12,350	18,188	195,805

** These figures have changed from previous SITREPs, and reflect total counts from each of the branches.

IOWA STATE UNIVERSITY
University Extension

Integrated **Crop Management** *NEWS*

Plan for 2009 Crop Year by Managing Flooded Soils

By Mahdi Al-Kaisi, and Stephen Barnhart, Department of Agronomy
Approximately 1.2 million acres of Iowa farm land affected by flooding early this year have not been planted to any crop. There are potential economic and soil environmental consequences of leaving these soils unattended. The long-term damage to soil and water quality in areas of significant flooding need to be considered when planning for next season's crop.

Several changes that take place when soil is under saturated conditions for an extended period of time can be carried into the next season. One of these potential changes is the change in biological health of the soil, with the greatest concern coming when soil is left unplanted. The existence of growing plants in such areas will help build up the microbial community in the root zone, which is essential to nutrient cycling.

The flooded soil may experience "post flood syndrome," similar to the "fallow syndrome", where the land is left unplanted to any crop for the entire season. Flooded soils will encounter problems caused by the reduction of soil vescular-arbuscular mycorhizae (VAM) fungi colonization rates next growing season.

The VAM fungi are colonized around the root systems of crops in a mutually beneficial (symbiotic) relationship. The fungi benefits from the host plant roots, the crop benefits from the increased nutrient uptake zone developed by the fungal hyphae (threads that make up the mycelium of fungi). Unplanted flooded areas in the state can potentially be affected next season due to the absence of a root system that is essential to maintaining this microbial community that contributes to nutrient cycling.

In addition to potential biological changes that will be caused by flooding and the absence of active root system, there are some other chemical and physical changes that occur when soil is flooded and left without any growing crop. Most of the chemical changes will be induced by temporary changes in oxidation and reduction conditions. However, physical-chemical-biological changes in soil such as aggregate stability, soil structure, pH, etc., can be significant, especially if there is no growing crop.

Cover crops are management tool for June flooded fields.
Cover crop can be very beneficial in improving soil quality through soil structure, water infiltration and biological community, and to remediating the potential damage caused by the flood. Cover crops will also serve to retain some of the existing soil fertilizer nutrients and reduce their loss through leaching and surface runoff.

It is highly recommended that fields affected by flooding be managed carefully for the remainder of this growing season. Planting a short-term cover crop will provide a host source to grow the fungi. The most likely cover crop choices are a 'spring cereal' crop such as oats, or a 'winter cereal' such as grain rye, winter wheat or winter triticale. The 'winter cereals' will grow longer into the autumn and can be expected to re-grow next spring. They might be a useful forage alternative, but will be an additional management consideration in row-crop settings.

Perennial or annual ryegrass would serve well as a temporary cover crop, but would be more

costly than a cereal grain. Forage legumes such as red clover, alfalfa, or sweetclover would also serve as a suitable cover crop, but due to the late season planting would not be expected to 'fix' very much legume nitrogen.

Producers frequently ask, "Would allowing a weed population to grow on these flooded sites work just as well to prevent fallow syndrome?" This is not a highly researched option, but biologically, yes. Weeds would likely serve as a suitable 'cover crop', but at the risk of increased weed seed dispersal this season and a greater weed management problem in future years. The presence of a planted cover crop, or weeds, will improve the wildlife habitat value of these flooded sites, compared with leaving them bare.

Use flood experience to plan long-term.
Farmers need to consider the long-term impact on flooded areas and carefully evaluate the nutrient status during next season. Taking soil samples from the flooded areas is a way to assess the major nutrients content, in particular the P level, and have information to use in correcting potential nutrient deficiencies. Producers also need to avoid any extensive tillage in areas affected by flooding so problems aren't compounded by soil compaction, which in turn reduces water penetration and increases potential soil erosion.

Lessons can be learned from flooding and wet conditions. Producers can evaluate the field conditions and assess the need for implementing longer-termed management practices that will minimize future impact. This is a good time to evaluate the need for installing tile drains or grass water ways that help remove access water from fields.

Mahdi Al-Kaisi is an associate professor in agronomy with research and extension responsibilities in soil management and environmental soil science. Stephen K. Barnhart is a professor of agronomy with extension, teaching, and research responsibilities in forage production and management.

REBUILDING A SAFER, STRONGER AND BETTER IOWA

"If you don't know where you are going, any road will take you there."
Lewis Carroll, Alice in Wonderland

Pursuant to Executive Order Number 7 issued by Governor Culver on May 25, 2008, the undersigned task force and resource members make the following recommendations to the Agriculture and Environment Task Force and the Rebuild Iowa Advisory Commission regarding recovery-related policies and priorities:

Rain Water is an Important Natural Resource

"When the well's dry, we know the worth of water."
Benjamin Franklin

The challenges that climate change pose for agriculture in Iowa can be reasonably anticipated. We can expect greater climate fluctuations, extremes in precipitation, both droughts and floods. The potential for increased droughts may be exacerbated by the fact that we also have been drawing down our groundwater at an unsustainable rate in recent decades.[1] To address both droughts and floods, infiltration and storing water on or in the land should be a new focus of water management in Iowa.

Strategically placed wetlands, rain water stored underground in the water table, deep-rooted perennial plants that absorb far more water than annuals, and many other infiltration and storage practices are available for Iowa farmers. Soils can be managed in accordance with closed recycling systems that build soil capacity to absorb and retain moisture. We ask the Task Force and Commission to recommend that the General Assembly pass legislation to provide agricultural support and incentives for the development and adoption of systems for improved water infiltration and storing water on the land, including strategically placed wetlands and systems for regulating water flow from field tile drains.

Drainage to Watershed Management

"It has been said that over 90% of the wetlands in the state of Iowa have been drained. This is perhaps true, and the establishment and existence of drainage districts has probably contributed to the draining of the great majority of said wetlands."
Iowa Drainage Law Manual 2005[2]

The Iowa Legislature first adopted statutes describing and defining a drainage district in about 1890. County supervisors or elected trustees administer the drainage districts. Drainage districts have the right of eminent domain to acquire lands for the public purpose of establishing and maintaining drainage district facilities. In most drainage districts, property tax assessments are levied based upon the need for drainage of the land and other factors such as soil type.

Water management in the 21st Century demands more than simple drainage of rain water. We need to consider hydrologic footprints and managing for water quality as well as quantity. The authority and responsibility of the local drainage districts should be refocused in accordance with the increasing demands of water management in Iowa. We ask the Task Force and Commission to recommend that the General Assembly pass legislation to update our drainage district laws so that local drainage districts manage for hydrologic footprint and water quality as well as for drainage of rain water.

Perennial Energy Crops

"Farmers can help fight global warming with techniques that preserve more carbon in their soils and improve water quality, while also producing their own fuels."
Lovins and Juniper, "Energy and Sustainable Agriculture"[3]

Prairie grasses, with roots that can go several feet deep, can absorb five to seven inches of rainfall per hour; while row crops absorb only one-half to one and one-half inches per hour.[4] Iowa can be a leader in both renewable energy and water management. Converting row crops to perennial cellulosic crops will increase the fuel productivity of the land while reducing flooding potential and other environmental impacts. Recent studies show that diverse mixtures of prairie grasses and wild flowering plants can produce dramatically more net bioenergy per acre than monocultures—whether corn, switchgrass or other crops—even on degraded land.[5] We ask the Task Force and Commission to recommend that the General Assembly pass legislation for

research, support and incentives to accelerate development of technologies that use perennial polyculture feedstocks for bioenergy production.

Livestock and Perennials

"[Managed rotational grazing] absorbs water about as well as native prairie."
Iowa farmer and soil scientist Francis Thicke[6]

Decades of research at Iowa State University have demonstrated the economic, agronomic, and water quality benefits of cropping systems that feature diversity, including 4-year crop rotations, cover crops and deep-rooting perennials. Yet, Iowa's prairies, pastures, alfalfa and small grain fields have given way to row crop production, which now covers about two-thirds of Iowa's land area.[7] Creeks previously buffered by perennial pastures are more and more often row crop farmed up to the water's edge. If Iowa's four million cattle[8] were maintained on well-managed rotationally grazed pastures, rainfall absorption would be greatly increased and flooding potential reduced. We ask the Task Force and Commission to recommend that the General Assembly pass legislation for research, support and incentives for improved forage-based livestock production methods in Iowa.

Respectfully Submitted on August 13, 2008,

Kamyar Enshayan
Regina Lloyd
Denise O'Brien
Donna Buell
Tolif Hunt
Chris Jones
Jerry Peckumn
Chris Petersen
Francis Thicke

[1] Frederick Kirschenmann, "Meeting the Agriculture Challenges of the 21st Century With a Little Help from Liberty Hyde Bailey", Paper presented at the Ag History Society Conference, June 23, 2007, Ames, Iowa.

[2] Iowa Drainage Law Manual, April 2005, Sponsored by the Iowa Highway Research Board (TR-497).

[3] L. Hunter Lovins and Christopher Juniper, "Energy and Sustainable Agriculture", Paper and presentation for the John Pesek Colloquium on Sustainable Agriculture, Iowa State University of Science and Technology and the Leopold Center for Sustainable Agriculture, 9 March 2005.

[4] Bharate, L., K. Lee, and R.C. Schultz. 2002. "Riparian zone soil-water infiltration under crops, pasture and established buffers." Agroforest Syst 56: 249–257.

[5] David Tilman, Jason Hill, and Clarence Lehan, "Carbon-Negative Biofuels from Low-Input High-Density Grassland Biomass," Science, 8 December 2006, op.cit. note 53.

[6] Thicke, Francis, "To cut runoff, switch from crops to grass", Des Moines Register, July 13, 2008.

[7] Mutel, Cornelia. 2008. The Emerald Horizon. University of Iowa Press.

[8] National Agriculture Statistics Service, 2008. http://www.nass.usda.gov.

Manage land to manage floods

By Duane Sand, Public Policy Director for the Iowa Natural Heritage Foundation, a nonprofit conservation organization. Op-Ed 7/08. Comments are welcomed at dsand@inhf.org, phone 515/288-1846.

Having just witnessed nature at its worst, Iowans are called to our best as we rally to prevent such destruction in the future. How should we make sense of the Great Flood of 2008: Why are the record floods coming so often and why were the damages so much greater than we have experienced from previous record floods? Most important, what can we do about it?

Some say recorded history is too short a time frame to safely predict extreme floods. Others claim we have just previewed what's in store if we do not effectively address global climate change. Both points may be partially correct, but they can also be a source of despair and paralysis. Fortunately, explanations nearer at hand offer more hope for the future and more immediate guidance.

Let's get back to the basics: Water management requires land management. And we need to do a much better job of both.

Consider the obvious land changes of the last 100 years: converted prairies and wetlands, cleared woodlands, drainage tiles and ditches, straightened streams, leveed floodplains and ever-more roads, roofs and driveways to shed more rainfall. While we have added buffers along some waterways and restored some wetlands, they are not enough to mitigate the impact of millions of acres that now act as a chute, rather than a sponge.

Consider that intensive row-crop farming and excessive tillage have long been depleting the very soil qualities that can absorb and store rainwater. Iowa had lost one-fourth of its original topsoil by the mid-1930s. Most of Iowa's cropland continued to suffer excessive soil erosion until at least the 1970s, and despite some improvements, studies show about 30 percent of our cropland is still eroding at excessive levels. Instead of slowing the flood, our precious topsoil is *part* of the flood.

Consider that cash crops used to be grown in long-term rotations that included hay, pasture and oats. Now, we see most watersheds have lost much of that deep-rooted vegetation, with its spring and fall soil cover, that prevented rapid run-off and erosion.

(more)

These factors go far to explain why historic flooding is not a reliable predictor of future flooding. They also suggest basic, common-sense policy and management changes we can use to reclaim healthier watersheds and mitigate the impact of deluges to come. Many of these options would also help prevent or slow climate change. Here are a few examples:

- Encourage and demonstrate production systems that maximize infiltration. These include continuous no-till farming for grain crops, grass-based livestock production and use of cover crops with corn and soybeans.
- Reinvent the Conservation Reserve Program for new environmental and economic realities, with an emphasis on strategically placed permanent buffers to control erosion, infiltrate water and improve water quality.
- Enforce existing soil conservation requirements in state and federal law. Increase spot checks to make sure erosion is controlled on all land that receives federal subsidies.
- Mandate and implement urban storm water ordinances that set infiltration and water-holding requirements, especially for new development. As cities sprawl over more of our landscape, urban residents play a greater land management role.
- Move crop production out of flood-prone areas where it makes economic sense to permanently convert floodplains to forests, grazing land and wildlife habitat, rather than repeatedly subsidizing crop insurance losses and repairing flood damages.

Communities are again seeking state and federal help to raise new and bigger levees. Some projects will make economic sense, but many won't. The unfortunate consequences of levees are that they raise downstream risks while, ironically, offering a false sense of security. They entice people to take unnecessary risks and do nothing to address the upstream sources of the problem.

Previous record rains fell on an Iowa landscape very different from today's. The quantity and speed of this year's floodwaters are, in large part, a consequence of our collective land management decisions. A renewed focus on conservation will help us shape a better, safer, more sustainable future. If we continue to neglect our land, we cannot afford to build levees high enough or strong enough to hold back the next Great Flood.

-30-

Rebuild Iowa Office
Agriculture and Environmental Taskforce
July 30, 2008
Farm Bureau

Comments from the Resource Group

Jerry Peckumn, Self-employed, Farmer and Real Estate

Suggested reading: "The Emerald Horizon" by Cornelia F. Mutel. This book is based on the natural history of Iowa. This will help understand the changes that have been made to hydrology benefits of the natural system.

The committee should adopt a standard from the start that all recommendations made by the task force will enhance sustainable agricultural production and protect and repair the ecological integrity of watersheds.

Review the overall impact of the changes in hydrology that have occurred from agriculture drainage and the paving of cities to the ecological integrity of the state's watersheds and how ecological losses have affected the flooding damage.

To understand what private industry expects for climate change, review business practices including insurance rates and coverage on crops, floods, wind, and hail. Although this summer's events may not be related to global climate change, the possibility of increased frequency of heavy and prolonged rain events should be discussed and any mitigation identified that would be needed.

Review the projected life of the flood control impoundments and compare the total costs of that type flood control to better watershed management.

Review the watershed benefits of producing more beef and other meats from perennial forage rather than from grain or row crop forage.

Review the conservation practices that the citizens of Iowa and the United States pay for through incentives to determine which are most effective in achieving both soil conservation that allows sustainable crop, livestock, and biomass production and provides water quality requirements needed for a more naturally functioning ecosystem.

How can the state meet the goals and requirements of the Federal Clean Water Act in a way that helps prevent the pollution associated with high rainfall events?

What could be done now and what changes in the law/regulations are needed to increase the use of wetlands and managed drainage systems, especially in the established agricultural drainage districts, to reduce flow rates and pollutants?

Review the benefits and costs associated with terraces compared to perennial cover on slopes and the use of wetlands/managed drainage for water quality, stream flow rates and soil sustainability.

If biomass will be used for energy production then now is the time to review the water quality & quantity benefits and soil sustainability of biomass production from perennials, particularly native species in more diverse plantings, compared to using unsustainable grain crop residues. How could biomass production also provide for an environmentally sound and better functioning infiltration system that would slow the current rapid loss of rain water but still protect aquifers from pollution.

Discuss the role that cover crops could play in row crop production to provide increased and higher quality water infiltration while protecting soil and reducing nutrient pollution.

Discuss the integration of the Clean Water Act, TMDLS, the state wildlife plan, and soil conservation plans in an overall state conservation plan to achieve water quality, flow rate, and ecological goals.

Gina, Lloyd, Iowa Farmers Union

Rebuilding Iowa from an agricultural perspective really all goes back to supporting sustainability of the small family farm while increasing small farm production to meet the increased needs of Iowans. We have a high demand for products other than commodities, such as fruit and vegetables, dairy, and meats for our schools, institutions and the public. Our farmers can not meet that need and compete in the current marketplace. As issues of food safety, security and sustainability continue to rise as public concerns we need to be preparing now for incentives to get young farmers back to the farms and create a living wage. This is turn will create economic impacts for our smaller communities that are struggling.

Francis Thicke, Self-employed

1) What role has wetlands drainage played in increasing flooding in Iowa, and what is the potential for strategically placed constructed wetlands to reduce flooding and nutrient loss?
2) How has tile drainage contributed to flooding in Iowa, and what is the potential for controlled drainage outlets on tile drains to reduce flooding and nutrient loss?
3) What is the potential for cover crops and crop rotations that include sod-based perennials to reduce flooding and nitrate leaching from Iowa croplands?
4) Prairiegrass soils absorb on the order of 10 times as much rainfall as row-cropped soils. What is the potential flooding reduction if the approximately three million acres now used to produce corn-based ethanol were to be converted to prairiegrass as a feedstock for ethanol production? Can the conversion of ethanol production from corn to perennial cellulosic feedstocks be accelerated to reduce flooding potential in Iowa?
5) What is the potential to reduce flooding if Iowa's approximately one million ruminant animals currently in confinement facilities eating high-grain diets were to be maintained instead on well managed, rotationally grazed pastures with naturally high capacity to absorb rainfall?

6) What is the potential to reduce flooding if Iowa's four million beef cows and calves were maintained on well managed, rotationally grazed pastures with naturally high capacity to absorb rainfall?

Paul Govoni, Hydro-Klean

1) Identify, prioritize, establish and implement Best Practice measures for each phase of post-devastation activity beginning with immediate emergency response protocol and developing through to five, ten and twenty strategic management plans.

2) Environmental impact issues must be addressed though a seamless communication system that includes government, industry and community participation. For example, once impacted counties, municipalities or townships have been identified, a temporary area-specific data bank can be established for access by all involved agency and industry service personnel. This resource should include, but not be limited to such items as: Department of Labor Hazardous Chemical Inventories, hydrologic and geologic data, private and municipal sub-surface utility structure schematics and prints, etc.

3) Insure that all industry and agency entities that will interact during and after a disaster are well versed in the roles, offerings, expectations and capabilities that each will provide. This will require advanced planning and agreement prior to, not during, an event.

4) Insure that all post disaster recovery methods are held as tightly as possible to existing regulatory measures to lessen the possibility of long -term or future negative consequences.

5) Employ the knowledge, experience, and first -hand accounts of disaster victims to assist in the community education process and to help dispel any " this can't to me" apathy toward preparedness and prevention programs

Gene Parkin, Department of Civil and Environmental Engineering

I think the biggest issue is how do we practice agriculture more sustainably, especially with respect to the environment? Is there something better we can do than have miles of tile drain which send nutrients more quickly to water bodies? Is there more we can do to minimize nutrient loss, sediment loss, and runoff to streams? Would judicious placement of buffer strips solve this problem? How can we better define and limit the use of highly erodable land? Can we develop a system of pollutant credit trading between farmers and urban areas, much in the same way that air pollution credits are bought and sold? We need to be much more creative and think outside the box here.

David McMurray

For suggested reading materials I would refer you to our website: www.umimra.org. This includes a summary fact sheet on our organizations postions on remediating the current lack of flood control. This also includes a summary, not final copy, of the USACE report on alternatives for improving flood control on the mainstem of the Mississippi river, including reference to Plan M which we support. This site also includes copies of the Illinois and Missouri Governor's support for Plan M as a preferred alternative. The website also a copy of the current brouchure on the issues dealing with flood control. This is perhaps more than some would wish to read but is a good reference point.

I have also attached a list of issues that should be addressed by the task force.

If I understand your email correctly I would say we are a voluntary organization comprised of drainage districts, businesses, communities, trade associations, individuals, economic devleopment units, individuals and companies who realize that flood control and a balanced river view is important for the future development and sustainability of Iowa and the entire Midwest. We have no statutory authority.

Our resources, if this means monetary flows, are based upon voluntary membership contributions. We have utilized this to support enactment of the Flow Frequency Study to determine river flows and elevations, the Delft Report(Delft Hydraulics of Holland) for management and development of the Mississippi River and enactment of the enabliing legislation under WRDA 1999 to develop a Comprehensive Plan for the systemic control of floods on the Mississippi and Illinois Rivers. The Association has also funded and provided a study on methods to coordinate the environmental components of the NESP (Navigation and Envrionmental Sustainability Project) with appropriate flood control considerations.Our organization is comprised of stakeholders who depend on the river for navigation, recreation and upon proper programs to protect the midwest from the extreme destructive cost of floods. This includes highway or rail transportation, communities, social fabric, publice health and safety and economic opportunities.

The authorities needed include support from the State of Iowa for Federal action to authorize and enable the implementation of appropriate flood control systems. It is our position that aggressive action by the affected States and the fact that this is a multi-state issue(as regards the mainstem Missisppi), this should result in a function that is the financial responsibility of the Federal Government. The important element is to accomplish the authoriztion of a plan that enables develpmemt of a systemic system while not being restricted by undue multi-state permitting restrictions.

Ther resources needed are principally aggressive State direction to its agencies and political support at the Federal level. The longer we delay and the more we commiserate the greater the likelihood of inaction at the Federal level and the greater the reliance upon State and local resources to achieve the necessary program. The alternative is more of the same that we experience in 1993 , 2008 and other significant events. While we can all say we cannnot afford this cost, we must look upon the initiative as an investment in the future and that is the future of Mid-America and not singularly any specific State. These waterways are multi-jurisdictional and should be supported in that manner.

Renata Sack

We should concentrate of doing everything with the motto "Green" in mind
Materials should all be

- Energy efficiency practices in construction
- All new structures should include geothermal practices
- New ordinances should be formulated so that small wind turbines could be attached to homes
- Solar voltaic panels on new structures and also on rehabbed houses
- We should only rebuild with LEED guidelines
- Wetland areas should be re-secured

- We should have vegetation bordering corn fields so that water can be absorbed
- Let us look to Greensburg, Kansas as an example of turning our communities into sustainable models of eco-living
- and ones that will be saved from future environmental catastrophes
- Formulate incentives to encourage recycling industries: burning garbage instead of corn as ethanol producing material,
- recycling metal, wood, everything

FINAL SWINE NUMBERS

FROM OAKVILLE IA AREA

JUNE, JULY 2008

OPERATOR	CARCASSES FROM INSIDE	CARCASSES FROM OUTSIDE	SWINE EUTHANIZED	SWINE RECOVERED LIVE
CLEAN HARBORS		371		
CLEAN HARBORS	1160			
RESCUE COALITION				69
RESCUE CO.			4	
DSM SHERIFF			19	
WILDLIFE SERVICES			7	

GRAND TOTAL NUMBER SWINE ACCOUNTED FOR = 1630

Iowa Land Improvement Contractor's Association

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First of all, my name is Dan Rasmussen, and I am the Executive Director for The Iowa Land Improvement Contractors Association. I was also a Land Improvement Contractor for 30 years in Buchanan County. I want to thank the committee for inviting the Iowa Land Improvement Contractors Association to give input at your meeting. For those of you who may not be familiar with Iowa LICA, we are celebrating our 50 year anniversary this year. This association has 400 contractor members across the state of Iowa. Most of these contractors are the ones who construct the waterways, terraces, sediment control structures, ponds, wetlands, and other conservation projects across the state. Iowa LICA is the largest association in Iowa that deals with the construction of these projects. In fact, Iowa LICA is the largest association in the nation that does this type of work. Iowa LICA members are dedicated to the "professional conservation of our soil and water".

Before making this report, I asked specifically, "What questions does this committee need to have answered by the contractors who may be doing much of the work that needs to be done after this year's record breaking weather events?"
The following questions were put to us:

1. **Are there adequate contractors and operators, under current conditions, to repair and construct conservation practices?**

   LICA believes that we have enough contractors in the state of Iowa to do the work that is needed. However, it depends on several variables.

   a. **What is the timetable that needs to be met?**

   In the past when emergency money has been allocated to do repair work on conservation practices, the government (usually Federal) wanted us to get the work done by January 1. Those of you who know what this work entails would realize that this is not at all practical. Many of the areas that need to be repaired are in crop. There is no reason to destroy crop to make repairs, and in most cases, the landowner would not let us do the work in the crop anyway.

   The only option that we have is to do the work after crop which in some parts of the state would only give us about 60 days. The answer to this is to extend the amount of time that this work can be done.

   b. **What are the weather conditions?**

I believe this is self explanatory. If we need to get the work done under the same weather conditions that we had this spring, it will not matter how many contractors there are. Most of the waterway work that was done late last fall and this spring will have to be redone.

2. Do you have recommendations to insure or increase numbers of contractors available?

There are two ways to insure or increase the number of contractors that are available to do this work.

a. Increase the price.

The price for doing conservation work has not increased enough over the last several years to make it profitable. This is a problem that has plagued the industry for years. Local offices (NRCS & IDALS) determine the estimated price of conservation work by averaging the cost of doing the work from the bills that were sent in the previous year. After the average is found, that is how they estimate the price for the upcoming year. The landowner receives paperwork from the government office with an estimated price of the project. He expects the contractor to do the project for the estimated cost. Many contractors have found that other work is more profitable and refuse to do the conservation work unless there is nothing else to do.

One way to solve that is to have a meeting with contractors every year and determine what the increase in price is going to be and adjust the estimated cost of projects. Some counties already do this.

b. Increase the length of the construction season.

Today, the construction time for most conservation projects is about 5 weeks in the spring and 8 weeks in the fall. Years ago, contractors were able to do this work all summer long. Farmers had hay ground to work on or land was in "diverted acres" and contractors were able to work a full 8 to 9 months. Today, we still have ground that the government has taken out of production, but contractors are not allowed to work on it except for a short period just before it goes back into production. These are the CRP acres.

LICA believes a certain amount of the dollars spent on CRP acres should be set aside to pay farmers to seed down acres so that conservation work could be done on those acres all summer long. LICA believes that one of the main purposes for having the conservation reserve is to increase water quality. It looks like utilizing those dollars for use in construction of water quality projects would be a perfect fit.

*Also, there is no **reasonable** reason why conservation practices shouldn't be allowed to be constructed on long term CRP acres. Some day these acres will be back in production and contractors could have all the permanent conservation projects completed before the ground is tilled.*

3. Is adequate technical assistance available to restore damaged practices and plan/design new ones? Do you have recommendations to improve response time?

a. Assistance to repair damaged practice.

It all depends on where you are located and the experience of the people in that office. I believe we do have enough people to take care of most of the damaged practices. Most contractors will not need any assistance to repair damaged waterways , dams, or terraces. I am confident that the personnel in the government offices know what contractors they can trust to do the repair work without a lot of supervision. However, if the local offices have to make plans and estimates on costs of each and every job that needs to be repaired they are going to have their hands full.

b. Assistance in planning and design of new practices.

There is no doubt that over the past several years there has been a decrease in the amount of technical service that is in the field. Last winter, LICA met with representative of NRCS, DNR, and IDALS and discussed the fact that in some parts of the state conservation practices had been designed and staked but not completed because of a lack of contractors. This would make us believe that there is no problem with technical assistance. I know for a fact that in some areas contractors have not been able to start jobs because designs were not done.

If we go back to my earlier comments on increasing the length of the construction period, we will not only make better use of our contractors but we can also make better use of the technicians. By increasing the length of the construction season, the government agencies will be able to do a better job educating their technicians. Right now, much of the design work has to be sent to district offices before it can be approved. By increasing the length of the construction season, we will be able to complete the work under better working conditions, get more done for the same money, increase profitability, and ultimately everyone wins with improved water quality.

4. In your opinion, what worked to reduce erosion and/or flooding in your area?

I had the opportunity to tour Delaware County with Secretary of Agriculture, Bill Northey. This was probably one of the most eye-opening tours that I have ever been on. We all know that it is almost impossible to think that we could prepare for this type of weather event. But what I found is that when a combination of conservation practices is used (i.e. terraces, waterways, sediment control basins, filter strips, buffer strips, no-till or minimum till farming), soil erosion can be controlled, making a tremendous difference in water quality.

One of the biggest concerns that we have seen is with the filter strips along streams. Contractors have known for a long time that some construction work needs to be done before filter strips are seeded. As the grass grows along the streams, the soil builds up along the outer edges and doesn't allow the water to enter the stream. The water then

runs parallel to the stream and erodes the soil in the farmed area and sometimes the water ponds drown the crop. This has become very evident this spring.
In closing, I would be happy to answer any questions about my presentation, any other questions you may have on repairing the damage created by this year's weather, or on what can be done in the future to solve some of the problems that have occurred this year so we may be able to prevent them in the future.

On behalf of the Iowa Land Improvement Contractors Association, I thank you for allowing us to participate at this meeting.

Dan Rasmussen
Executive Director of Iowa LICA

Comment

Lessons from the flood

Don't build in the floodplain. That's the first lesson I learned (relearned) from the flood of 2008. I witnessed the city of Cedar Rapids, Iowa, slip underneath a swollen Cedar River on June 13, causing the evacuation of 4000−5000 buildings and property damage estimated at $1 billion or more. I saw my own school, the University of Iowa, suffer losses to 20 buildings along the engorged Iowa River. Some were constructed recently, well within memory of the devastating flood of 1993. People have called the 1993 flood a 100 year (yr) event, but it is just one of several major floods Cedar Rapids has experienced in the past 100 yr, says Rich Mahaney, emergency management coordinator for the Linn County (Iowa) Emergency Management Agency. How soon we forget! But the 2008 flood was much worse. According to geographic information system (GIS) maps developed by Linn County, it was at least a 500 yr event. The GIS maps show that the area of the flood was beyond the actual 500 yr floodplain footprint, Mahaney says. That means we experienced a destructive, nearly 100 yr flood, followed within 15 yr by a 500 yr flood. It makes you start to wonder about statistics, doesn't it?

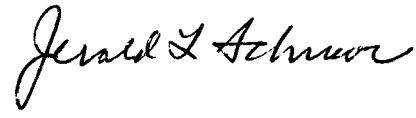
Don't believe the statistics. I'm certainly not an expert on hydrometeorology or flood forecasting, but if I wanted to estimate the likelihood and extent of a flood event with a 500 yr recurrence interval, I would need about a 1500 yr record to check it. I'd like to see at least three of those records before I drew any conclusions about where to build and how to plan my city, right? Of course, we don't have the luxury of such a lengthy record, so instead we make statistical assumptions and use extreme value theory to extrapolate the extreme events that have not yet been observed. But what if the assumptions are wrong? And what if all of the statistical characteristics are changing with time?

Don't assume hydrology is a constant. Prior to settlers plowing prairie soils and draining wetlands for agriculture, waters moved more slowly, precipitation infiltrated to a greater extent, and peak flow events were much less flashy. Prior to engineers endeavoring to control floods, our rivers meandered, and channels and levees didn't exist to hurry waters to the Gulf. Now, precipitation moves quickly through drainage networks, along straight rivers, and past flood walls; we are protected from moderate floods and frequent inundation of our fields and cities. But when extreme events overwhelm the capacity of the engineered system, we still get inundated—and with much more serious consequences.

Don't count on the levees. Levees don't hold—and that's actually a good thing. At least it's good for downstream folks who catch a break (no pun intended) as the river reclaims its floodplain and fills the spatial domain where it's meant to be. Levee breaks release a tremendous volume of water; this decreases and delays the flood crest stage discharge. But breaks in levees are also good for ecosystems. Biologists tell me that the greatest ecological damage to the Upper Mississippi River is caused not by our locks and dams, or even by intensive agricultural runoff, but rather it's because we separate the river from its floodplain. Native species require periodic flooding for dispersal, spawning, and recruitment; backwater habitats and sloughs need it for flushing of sediments; and aquatic plants use it for dispersal and habitat renewal. Speeding the water toward the river's mouth for flood control is part of the same mentality that brings us other tragedies of the commons like Gulf hypoxia and global warming. The golden rule of the environment should be a reminder that we all live downstream from someone else.

Don't forget the people. The violence of recent weather, the fright of every-night thunderstorms, and the terror of tornadoes has immobilized some people. Many have lost everything, from either floods or tornadoes; some have even lost their loved ones. Yet, incredibly, adversity seems to bring out the best in people. I saw students, farmers, professors, and convicts working side by side to transform a million sandbags into a flood wall. I spoke with farmers who had lost most of their crops. One farmer told me that he simply watched as 100 of his cattle floated silently down the Iowa River never to be seen again. But most people are undeterred—they are more inspiring than the force of any flood.

Don't ignore the possibility that extreme weather events are related to climate change. These more recent events may not equal the damage or consequences stemming from Hurricane Katrina. But how many Katrinas can society withstand if we are the cause of climate change? As the planet warms, many climate models predict more evapotranspiration, more humidity, more clouds, and more precipitation. There's more energy to dissipate. It's impossible to say with certainty that the floods of 2008 were caused by climate change; there have been larger floods in the past, and there will be larger ones in the future. But to ignore the substantial evidence that our massive disruption of global biogeochemical cycles on earth could amplify climatic extremes, and to not at least take action to prevent such an outcome, is reckless and irresponsible. Denial still runs rampant through the U.S. like a flood on the Iowa River.



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NEWS RELEASE

Mississippi River Commission Calls for Stronger Flood Damage Reduction for the Upper Mississippi River Basin

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Vicksburg, MS, August, 18, 2008 -- The Mississippi River Commission (MRC) voted last week to recommend a plan for comprehensive flood damage reduction, Plan H, on the Upper Mississippi watershed in a public meeting at Hannibal, Missouri.

Plan H provides for a '500-year level of flood protection' and the plan stems from a multi-year study. Additionally, the plan was modified by the MRC to ensure there are no increases in water surface levels on the Mississippi River below Thebes, Illinois, to protect the Nation's investment for the six states protected by the Mississippi River and Tributaries Project.

"Two major floods in the last fifteen years have caused billions in economic damage and heart-breaking devastation to the region's people. These disasters compel the Commission to call for action in the Upper Mississippi River watershed," said MRC President-designee, Brig. Gen. Michael J. Walsh.

"A comprehensive plan for flood damage reduction will now join the on-going navigation improvements and environmental restoration efforts needed to maximize long-term and sustainable benefits for the upper river," Walsh added.

MRC members also stated that the people who live along the Mississippi River are sustained by it, and they in turn support the Nation by working the land and sustaining the environment.

"The people who depend on this magnificent waterway that meanders through the most productive land in the United States, are also the people who power the economic engine of mid-America," according to the MRC letter of recommendation. "It is of little use to engineer solutions or develop grand plans if we can not improve the quality of life and sustain the environment upon which that quality depends."

For a copy of the Upper Mississippi River Comprehensive Plan, visit the World Wide Web @ http://www.mvr.usace.army.mil/PublicAffairsOffice/UMRCPMainReportFeb2008.pdf

For more information about the Mississippi River Commission, visit the World Wide Web @ http://www.mvd.usace.army.mil/mrc/